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ABSTRACT

The document reports on a survey of teaching practice, pupil activity, and classroom resources in a sample of 28 rural and urban primary school classrooms in Northern Ireland. In 1974-1975 the Northern Ireland Council for Educational Research surveyed classroom resources and observed school routine, movement of pupils, changes of teachers, and classroom events. The report is divided into 11 chapters: 1) provides background to the study; 2) specifies the aims and methodology: 3) describes the sample of schools: 4) details classroom conditions and material provision: 5) describes the teachers' approaches to classroom organization, evaluation, and curriculum content: 6) examines pupils' attitudes toward classroom activities: 7) includes descriptions of the variation in school hours, the movement around school, out-of-school visits, and shared teaching responsibility: 8) 9) and 10) describe the results of the systematic observation of classroom activities, including the type of lessons and the nature of the pupils' tasks, teacher activities in different curriculum areas, and patterns of pupil activity in the classroom: and 11) discusses implications and findings. Conclusions are that while there has not been significant movement toward innovative patterns of teaching, some innovative practices have been incorporated: textbooks are widely used; teaching practices vary widely; and teachers are as much managers as instructors. Appendices provide tables and charts relating to pupil activities, classroom observation, and other data. (Author/CK)

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TEACHER PRACTICES
AND
CLASSROOM RESOURCES

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An examination of teaching practice, pupil activity and classroom resources in a sample of rural and urban primary school classrooms.

BY

Karen Trew

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INTRODUCTION

The Northern Ireland Primary Education Teachers' Guide (1974) noted that the 'expansion in the scope of the primary curriculum and the freedom of each school to devise its own pattern of experience for the children have resulted in greater diversity among schools than existed previously'. However, although knowledge of classroom practice is shared by those who have sustained contact with the schools, there have been few attempts to communicate this knowledge or to systematically sample practice in different situations and under different conditions. Empirical evidence is not available either to support or to repudiate general statements about current school practice in Northern Ireland or to quantify changes in practice. Instead, as Richards (1974) suggests 'what we do have are glamorous generalisations which tend to make teachers either thoroughly guilty or thoroughly cynical Such generalisations are not based on careful systematic observation and examination by professionals but are often grounded in hearsay, anecdote and the wishful thinking of some non-practitioners'.

In the school year 1974-75 the Northern Ireland Council for Educational Research carried out an investigation which aimed to provide an objective description of certain aspects of provision and practice in 28 upper primary school classrooms in an area sample of rural and urban schools. The investigation involved the charting of classroom resources, the observation of school routine such as school hours, the movement of pupils and changes of teachers and the systematic observation of classroom events including teacher and pupil activities.

The report is in eleven parts. Chapter 1 provides the background to the study. It describes the discrepancy between official statements and empirical evidence concerning classroom practice. Chapter 2 specifies the aims of the enquiry and its methodology.

Chapter 3 describes the sample of schools and Chapter 4 details the classroom conditions and material provision provided for Primary 6 pupils in these schools.

The teachers' approaches to classroom organisation, evaluation and curriculum content are described in Chapter 5. The pupils' attitudes towards classroom activities are examined in Chapter 6.

Observation of the class activity provided information on the routine practices of the schools. Chapter 7 includes descriptions of the variation in school hours, the movement around the school, out-of-school visits and shared teaching responsibilities.

Chapters 8, 9, and 10 describe the results of the systematic observation of classroom activities. Chapter 8 details the type of lessons observed and the nature of the tasks on which pupils were engaged. Chapter 9 describes the observed teacher activities in different curriculum areas within rural and urban schools and Chapter 10 examines the patterns of pupil activity observed in the classroom.

The implications of the enquiry are discussed in Chapter 11.

GLOSSARY OF TERMS

Certain terms used in the report refer to specific features of the education system in Northern Ireland. These terms are defined below.

Controlled schools	A grant-aided school under the management of an area education and library board.
Department of Education (Northern Ireland)	The Ministry of Education (NI) changed its title to the Department of Education (NI) from the 1st January 1974.
Education and Library Board	Education and library boards were established from the 1st April 1973 as the local education authorities and library authorities for five areas in Northern Ireland.

Maintained schools	Voluntary schools (largely Roman Catholic) under the management of committees consisting of representatives appointed by the trustees or managers of the voluntary schools and by the appropriate education and library board.

1: BACKGROUND

In recent years official publications from the Ministry of Education for Northern Ireland have reiterated the view that primary schools have been involved in a period of rapid and widespread change. However, Richards (1976) has pointed out that although there has been a gradual shift towards a child-centred position in British primary schools, this shift is manifest more at the level of policy and public pronouncement than in the classroom.

The first section of this chapter contrasts the official view of classroom practice in Northern Ireland primary schools with empirical evidence provided by three recent surveys. Section Two examines the level of material provision in these primary schools as described in Government publications and itemised in empirical investigations. The Northern Ireland evidence on practice and provision is viewed in a wider context in Section Three, which briefly summarises recent English and Scottish studies in this area. The chapter concludes with a discussion of the implications of previous research for the current investigation and a description of the content of the Report.

CLASSROOM PRACTICES IN NORTHERN IRELAND PRIMARY SCHOOLS

The Sixth Advisory Council for Education noted in its report *Primary Education in Northern Ireland* (1968) that changes in teaching methods take place more slowly than other changes in education. It considered that while the previous twenty years had been characterised by some detectable attempts to hasten the pace of change towards less formal methods of classroom interaction, the majority of pupils were still being taught by traditional methods in class groups.

The Council provided no evidence to support this conclusion but it is notable that in the *Programme for Primary Schools* (1956) teachers in Northern Ireland were advised that 'while class instruction can at times be employed to advantage it should frequently give place to group and individual teaching' (p.9).

Both the *Programme for Primary Schools* and the Report on *Primary Education in Northern Ireland* were concerned with prescribing practice, and therefore provide little evidence on the day-to-day activities in the classrooms of the time. However, the 1970 Report of the Ministry of Education (NI) included an account of the views of the Ministry on the nature of change in primary school practice. They suggested, for example, that 'schools have been experimenting successfully with new forms of organisation. In some schools, schemes of 'vertical' or family grouping have been introduced and the traditional time-table arrangement with separate subject divisions modified to allow for a more unified treatment of the curriculum and freer scope for the expression of the skills and interests of individual pupils. Streaming by ability is fast disappearing and class instruction is being replaced by group activities of various kinds. The use that can be made of the school surroundings as a starting point for work in the classroom is being appreciated to a greater extent than formerly' (p.8).

However, nowhere in this report did the Inspectorate indicate the extent of these changes in the primary school, and in the following year they presented a more qualified account of innovations in Northern Ireland primary education. They noted that 'the change in any single year is not great, but over a longer period of time the movement towards a more flexible organisation and the integration of subjects and disciplines hitherto regarded as separate entities is clearly apparent' (p.10).

These changes in practice were underlined in the 1974 *Northern Ireland Primary Education Teachers' Guide,* which also stressed the changing role of the Department of Education (formerly the Ministry of Education) in relation to primary education in the province. The Northern Ireland system of education had 'traditionally been dominated by the official programme and by associated mechanisms of inspection and examination'(McConnellogue, 1974). However, in contrast with the *Programme for Primary Schools,* the Teachers' Guide did not attempt to prescribe in precise detail what should be taught in schools. Instead, it suggested that 'each teacher must evolve, within broad and generally understood limits and in compatability with her staff colleagues, the curriculum, organisation and methods most suited to her own circumstances' (p.1).

In summary, the official view of Northern Ireland's primary education system, as indicated in a series of reports, suggests that by 1974 the Department of Education considered that some fundamental changes were occurring in the curriculum and organisation of the Northern Ireland primary school. Moreover, these changes were regarded as desirable. The Teachers' Guide comments, for example, 'Educationalists are slowly learning to see children's development in many perspectives - sociological, social and individual, cognitive and emotional and fresh insights have been continually shaping and reshaping our methods of education. Improved physical conditions in our primary schools, more abundant resources and the greater freedom resulting from modification of the selection procedure all encourage the adoption of new approaches' (p.5).

The Department of Education's views on the pace and nature of change were not supported by empirical evidence on the nature of classroom practice in either the average school or those considered to be progressive. McConnellogue (1974) carried out a survey among 122 teachers in 13 schools to investigate the predominant influences on teachers in their day-to-day work. He found that teachers considered that formal agencies of curriculum development (Schools Council, Northern Ireland Schools Curriculum Committee and Teachers' Centres) had little influence on the school or classroom. Instead, the teachers considered that they or their principals were the most important influences on the curriculum and that the most important outside influences were the Inspectorate and the *Programme for Primary Schools*. McConnellogue concluded that in Northern Ireland 'innovation does not appear to have been rapid in the primary school'. Instead, teachers were adhering to an approach to primary education that was considered even at that time to be out of date, both in statements by the Ministry and in official reports.

In 1970, The Northern Ireland Council for Educational Research carried out one of the few investigations designed to sample practice in Northern Ireland Primary Schools. The survey was confined to practice in the teaching of reading and number/mathematics in the lower primary school, from age of intake up to and including Primary 3. It sampled the teaching practices of a representative sample of teachers using self-completion questionnaires. It found that 'in their methods and approach to the teaching of reading in the lower primary school teachers are guided by, and follow closely the suggestions contained in the *Programme for Primary School'* (p.9). It also noted that although two-thirds of the teachers in 1968 found the Programme a useful guide for teaching mathematics, a majority of teachers claimed to have changed their approach over the two year period 1966-1968. Nearly all of these teachers claimed to have introduced more practical work and to be using a greater variety of materials.

Evidence on classroom practice in the upper primary school was provided incidentally in another NICER investigation entitled *Environment and Primary Education* (1971). The Inspectorate visited a representative sample of 115 primary schools for this survey, and provided assessments of approaches to the teaching of reading and mathematics in both lower and upper primary departments. It is apparent from Table 1.1, which summarises the Inspectorate's rating of the teaching of reading and allied skills in 110 upper primary schools, that in 1970 the majority of schools were considered as neither formal or informal in their approach to reading but as favouring a mixture of formal practice and practical activities.

Table 1.1: *The percentage of schools allocated to each of five approaches to reading by the Inspectorate in 1970.*

Teaching method	Percentage of schools (N=110)
Major emphasis on the use of a class reader and formal written and oral work (e.g. spelling)	1
Emphasis on class reader and formal written work	13
Mixed formal and informal method	76
Emphasis on reading and writing activities	7
Major emphasis on reading and writing activities (no emphasis on set writing and spelling)	3

A similar pattern emerged from the ratings of the teaching of mathematics to that found for the ratings of the teaching of reading. Table 1.2 shows that the majority of schools were considered as providing mixed formal and informal methods. However, a quarter of the schools were considered by the Inspectorate to have a formal approach to the teaching of mathematics, whereas the Inspectorate considered that only six schools in a sample of 110 emphasised mathematical topics or discovery methods.

Table 1.2: *The percentage of schools allocated to five approaches to teaching mathematics by the Inspectorate in 1970.*

Teaching method	Percentage of schools (N=110)
Major emphasis on formal processes and text book practice	1
Emphasis on formal processes and text book practice	24
Mixed formal and informal methods	68
Emphasis on discovery methods	5
Major emphasis on discovery methods and mathematical topics	1

The emphasis on classroom practice provided by this survey is limited. It does not describe teachers general approach to the primary school curriculum or how mixed formal and informal methods were interpreted in the classroom. It did not aim to describe practice, yet it is one of the few studies carried out in Northern Ireland that provides information on teaching approaches in the Upper Primary School.

In general, therefore, while official publications of the Ministry of Education for Northern Ireland have suggested that schools in the province are changing, there is only limited empirical evidence to support this viewpoint or to provide an adequate description of primary education in practice in the schools.

MATERIAL RESOURCES IN PRIMARY SCHOOLS IN NORTHERN IRELAND

The 1970 Report of the Ministry of Education noted that 'The supply of books to the schools is improving in most areas and the children are using them more purposefully and skilfully as part of their daily routine' (p.9). Four years later, *The Northern Ireland Primary Education Teachers' Guide* noted in discussing the use of books that 'among the most welcome changes which have accompanied the growing informality of the primary school has come a new conception of the use of books. In many schools there are no longer class readers, supplementary readers, group readers, text books and library books; there are simply books to be used as and when they are needed' (p.33).

However, the 1970 NICER investigation into the teaching of reading and number/mathematics in the lower primary school found that ninety-nine per cent of the sample of teachers used a series of graded readers for teaching reading, and seventy per cent of these teachers were satisfied with the series in use in their schools. In addition, some sixty per cent of the classes had access to a county library block loan scheme and forty-five per cent of the teachers found that reading library books was a useful reading experience for their class. In contrast, text books were not widely used for mathematics in the lower primary school, where teachers were critical of their value or suitability.

This investigation also found that teachers used a wide range of materials and aids to introduce mathematical concepts. The report noted that these included scrap materials, sand and water, manufactured play and building aids and structured or manufactured apparatus. However, manufactured apparatus was available to only a small minority of teachers and scrap materials from the teachers' and pupils' homes were used most widely.

In the NICER survey *Environment and Primary Education* (1971) the Inspectorate rated the library provision in the sample of 115 schools. They considered that only three per cent of schools had a superior library area with an exceptional supply of books, sixty-three per cent had good class library provision, twenty-one per cent of schools had poor class or school library provision and two per cent had no visible library provision.

The Inspectorate also rated both the supply of books and mathematical equipment available to the classrooms of these schools. They considered that ninety-two per cent of the schools had an adequate supply of books for class use. However, although fifty-nine per cent of schools with an enrolment of more than 200 pupils were considered to have an adequate supply of mathematical equipment for the upper school, these provisions were considered adequate in only thirty per cent of smaller schools (Trew, 1971).

Each of the 29 larger schools in this survey was equipped with a piano, record player or other musical instruments and a radio. All but one school had a tape recorder and over two-thirds of the schools had a slide projector or a television set. In contrast, although three-quarters of the 86 smaller schools were equipped with a radio and over half had a piano, record player or musical instruments, only twenty-nine per cent of these schools had access to either slide or film projector and less than a fifth of the schools had a television or tape recorder.

Boyd (1972) noted that 'it is evident from an examination of the annual reports of the Ministry of Education that small schools in the rural areas of Northern Ireland have consistently lagged behind large urban schools in the adequacy of their equipment. Up to the immediate post-war years these deficiencies tended to be confined to the more mundane classroom fittings and furnishing such as desks, blackboards and wall maps. Since the 1950's, with the general improvement in teaching conditions, the majority of the former difference have declined, only to be replaced by differences in the supply of teaching aids and related material' (p.337).

In a survey among principals of 278 one-, two- and three-teacher schools in the province, Boyd found that less than a quarter of these schools had a tape recorder, television, record player or projector. However, a third of the schools had a duplicator, forty per cent had a film-strip projector and eighty per cent had a piano.

The Northern Ireland Primary Education Teachers' Guide noted that 'the trend towards a broader primary curriculum and the shift of emphasis from teaching to learning have been further assisted by the widespread use of television, radio, projectors and tape recorders in schools' (p.8). The evidence from the NICER survey *Environment and Primary Education* (1971) and the survey carried out in small rural schools by Boyd (1972) indicates that these aids were lacking in a high proportion of schools and in particular they were not available to the smaller schools in the province. In general, the survey evidence indicated that primary schools in Northern Ireland were considered to have an adequate library provision and an adequate supply of books for class use. However, the level of books was rated in relation to the accepted standards of the time and there is no evidence to indicate the level of these provisions or how these resources were actually used in the classroom.

CLASSROOM PRACTICE AND THE USE OF MATERIAL RESOURCES

A series of investigations in England and Scotland have employed direct observation of classroom events or self-completion questionnaires to sample primary school practice. These studies, which have recently been reviewed by Simon (1976) and Trew (1977) indicate that in Britain, as in Northern Ireland, the majority of teachers have opted for flexibility and variety of techniques rather than adopting exclusively formal or informal approaches. Few of these studies were concerned to describe the use of material resources in the day-to-day activities of the classroom.

A survey by the School Library Association (1962) documented the way in which books were being used creatively in primary schools. The report presents accounts by teachers of how classes, groups or individual pupils were led to seek out and enjoy using books as an integral part of their learning. In the assessment of these accounts the report noted that the successful school and teacher not only provided pupils with sufficient books but, equally importantly, they assured that these books were easily available at all times. The enquiry indicated the value of having books in or near classrooms where they are quickly, easily and freely available and, in larger schools the importance of linking the classroom collections with a central supply of books.

The SLA report illustrated good but not necessarily normal practice. A more realistic picture may have been presented in a survey carried out by HMI's on the provision and use of books in all of the ninety-six primary schools of one division of an English county. The HMI's found that, including library, text books and readers, there were on average 17 books per pupil in the infant schools and departments and 41.5 books per pupil in the junior schools. The HMI's noted that while they could not fault the initial procedures adopted by the schools to promote a desire to read, it was in the next step that differences crept in and were later magnified. They found that 'in only seven schools of those visited were information books being used as they should be as sources of reference for planned projects. In all too many schools they were the project itself'. Furthermore, the ways in which text books and work books were used in over half the junior schools visited were considered by the Inspectors as inconsistent with modern primary school methods.

These surveys related their findings to notions of 'good practice' but did not enquire into the actual outcomes of the various methods of using books in the classrooms. However, some of the large scale investigations into reading standards in Kent carried out by the NFER in the fifties and sixties did include analyses of the relationship between pupils' reading standards and indices of the material and reading environment of their classrooms.

Morris (1966), for example, found that the reading test scores obtained by a sample of 714 children in each of their last three years at primary school were significantly and positively correlated with the score given to their classroom conditions in each year and also to an index of the reading environment. This index was derived from ratings of the content and general conditions of class libraries and the quantity and quality of all the other books generally available to the class. Morris stressed that the results obtained could have arisen either because better provision resulted in improved reading ability, or equally because better readers were provided with a better reading environment.

Morris, in common with other researchers in this area, did not take account of the relative time pupils spent using classroom resources. Alderson and Hird (1973) carried out one of the few investigations that employed systematic direct observation to examine both pupil activities and the materials they used in the classroom. This study involved 50 pupils in the lower and upper departments of an open-plan primary school. It showed that for some sixty per cent of the observed time pupils in the upper primary school were using some sort of materials. These materials included pencil and paper (21%), art and craft (13%) and reading materials, including reference and text books which were being used by pupils during only ten per cent of the observed time. This study, therefore, found that pupils were using art materials more frequently than reading materials. However, this school was atypical and without information on a sample of schools it is difficult to assess whether the findings reported by Alderson and Hird represent generally accepted upper primary school classroom practice.

Although there are no detailed accounts of the use of materials in representative samples of schools, there are several British investigations that have involved observations of both pupil and teacher activities throughout the school day and which give some indication of the cycle of events in the classroom.

In Scotland, Nash (1973) observed the percentage of time per week spent in five activities (written seat-work, oral work, activity work, games and radio/TV) in the senior classes of five primary schools. In all but one of these schools written seat-work occupied over half the time available. He found that although seat-work activity could occur in most of the curriculum subjects, in practice this activity described the way in which mathematics, English and social studies were mainly taught. Two-thirds of the seat-work time was spent on text book exercises in mathematics or English. What the study did not show was how much of this time was used by teachers to work with individuals or small groups of pupils.

Hilsum and Cane (1971) observed 129 teachers in 66 Surrey County Primary Schools. They were concerned to describe how teachers allocated their time to professional matters during school hours and at home. They found that teachers spent forty-three per cent of the time during teaching sessions on actual instruction with the whole class, a small group or an individual pupil. In practice, they found that a typical teaching session contained all three types of interaction, 'as when the teacher first talked to the class about a previous piece of work, explained a new process or theme that was to form the content of the observed lesson, then went round to groups or individuals to discuss points and answer questions' (p.59).

Hilsum and Cane also found that the patterns of teaching activities observed in the classrooms were, with a few exceptions, not significantly related to either teacher, school or class characteristics. They were not concerned with difference in teaching activities between different curriculum areas. However, Wilson, Spelman and Trew (1976) in an experimental study which involved systematic observation of teaching in 36 Northern Ireland classrooms found that teaching style varied consistently between mathematics and English when teachers were observed teaching both subjects.

In summary, therefore, the studies reviewed in this chapter indicate that the majority of teachers have evolved individual teaching strategies incorporating aspects of both traditional and progressive methods. However, these studies leave many questions unanswered. For example, it is not clear which aspects of traditional practice have been retained or which innovations have been adopted. Similarly, although a wide range of material resources are available for classroom use there is little evidence to suggest how teachers employ these resources or whether or not the provision of a variety of resource materials affects the patterns of interaction within the classroom.

PREVIOUS RESEARCH AND THE PRESENT INVESTIGATION

Previous research on primary education in Northern Ireland has largely been confined to studies of the concomitants of educational success or failure. The large scale NICER survey *Environment and Primary Education (1971)* examined the attainment of 7 and 10 yearolds in the context of their homes, neighbourhood and school. The findings established the importance of the home and more particularly the educational interest of parents as formidable educational influences. Though the study took account of the physical aspects of the school, the characteristics of its teachers and its pattern of organisation and teaching, the report conceded that its examination of the school was more cursory than its examination of the home. It concluded that there was a strong need for research which looked more closely and systematically at what goes on in classrooms.

The current investigation arose directly from an initial proposal that NICER should carry out a school-based investigation to examine the nature of classroom processes in the primary school. The study was to be a co-operative venture with the Scottish Council for Research in Education and the National Foundation for Educational Research. However, in the absence of a clear, generally accepted statement of research aims the studies developed along separate directions.

In Northern Ireland it was decided that while published research studies could indicate the general research strategies to adopt, they alone could not provide the researcher with an acceptable set of priorities for a local investigation. The planning of the project was therefore preceded by a consultative stage during which meetings were held with school principals, primary school teachers, primary school advisers, college of education lecturers and members of the Inspectorate. In addition, several visits were made to selected schools to observe class activities. These visits included discussions with class teachers on their approaches to teaching and the constraints they encountered in planning their daily work. The consultations revealed local interest and support for research into the provision and use of books and educational materials in school and in the classroom. There was also considerable support for research into the use of projects in the primary school classroom.

The investigation as described in this report had, therefore, as its primary aim a description of both teacher and pupil activities in a representative sample of urban and rural primary schools with particular reference to the use of material resources in the classroom.

2: OBJECTIVES AND DESIGN OF ENQUIRY

OBJECTIVES

The general aim of the current investigation was to describe both pupil and teacher activities in upper primary school classrooms in an area sample of Northern Ireland primary schools. The specific objectives which were formulated in the context of this aim can be stated as follows:

1. To describe the primary school day in terms of timetable and curriculum.
2. To examine the range of classroom resources available to and used by teachers and pupils.
3. To examine patterns of teaching within specific curriculum areas.
4. To examine pupil attitudes and to describe pupil activities within specific curriculum areas.
5. To examine the extent to which classroom life differs between the larger urban and the smaller rural school.

METHOD AND NATURE OF ENQUIRY

Research into classroom practice has been carried out using teacher self-completion questionnaires (Bennett, 1976) and teacher diaries (Gulland, 1975). However, although teachers can report on their overall strategies and their general approach to the classroom, they cannot objectively observe and record the activities of each pupil in the classroom. Furthermore, as Morrison (1973) suggests in reference to classroom events, so much goes on and often so rapidly that even the research worker can only pick up part of it. The individual teacher involved in the behaviours is at greater disadvantage in analysing his own performance' (p.1).

The researcher who wants to describe pupil as well as teacher activities in the classroom has to enter the school and observe classroom events. Systematic observation is one of the techniques which has been widely used by the researcher to describe classroom activities (Rosenshine and Furst, 1973). McIntyre (1974) suggests that systematic observation can be defined as a technique in which 'the observer focusses his attention upon pre-specified aspects of classroom activities and describes these according to a pre-specified system' (p.42).

The review of research into classroom practices indicated the advisability of using systematic observation techniques to sample the activities of pupils and teachers. The next stage therefore involved the selection of an observation schedule which reflected the aims of the study and also adequately sampled events in the population of classrooms. Although observational methods have become increasingly important in educational research, Boydell (1975) has noted that 'the foci of the overwhelming majority of observational techniques reflect a formal mode of teaching in which verbal interaction is public to the whole class, and teacher dominated in terms of both the quantity and nature of the contributions' (p.138). An additional drawback of such observation schedules for the current investigation was that they concentrated on teachers' verbal behaviour rather than pupils' behaviours and that they also ignored the context in which teaching occurred. As Rosenshine and Furst (1973) commented 'Current observation instruments disregard the materials being read, the assignments students write, the teacher's use of written or oral material and the physical features of the room, such as seating arrangements and lighting' (p.166).

However, some unpublished observation schedules, such as those developed by Herbert (1974) and Alderson and Hird (1973), focussed on both pupils' activities and the materials they used in the classroom, while that developed by Lindvall and Cox (1970) focussed exclusively on pupil activities. Trial observations with these schedules in primary school classrooms revealed that they were not wholly suitable for the present investigation. Although each schedule sampled pupil behaviour, the categorisation of classroom events was either inappropriate or irrelevant to the aims of the enquiry.

In view of the findings of the trial observations, it was decided to adapt available instrumentation to reflect the requirements of the study. Two observation schedules were developed to sample classroom events. The Pupil Activity Observation Record (PAOR) was designed to record pupil activities and the materials they used in a wide variety of settings in the upper primary school. The observer using this schedule recorded the behaviour of each pupil in the class during ten-minute intervals. The content, grouping and format of the observed lesson and the teacher's movement and activities during the observation period were then recorded using categories devised for a Context Schedule. Classrooms events were sampled during six occasions on each of six visits to each class. Details of the development, content, recording procedure and reliability of both observation schedules are included in Appendix A.

Further checklists were used during the visits to schools to record details of the level of school and classroom accommodation and equipment. These schedules were derived from those developed by Morris (1966) and Laing (1971). The aspects of the school which were assessed included the accommodation, equipment, displays and the central library facilities. In the classrooms the observer also recorded the adequacy of accommodation, equipment and library facilities. In addition a list was made of the text books available to each class.

Direct observation and recording of classroom events provided information on eight and a half hours of classroom life. However, pupils and teachers may spend approximately 1,200 hours in the school during the academic year. Questionnaires for pupils and teachers and interviews with teachers were therefore used to provide information on school hours and the range of class activities carried out during the year. Teachers also provided biographical details. The teacher's approach to pupil evaluation and motivation was also recorded by the observer during the visits to schools.

The composition of the class, such as the age and class level of each pupil, was ascertained from information included in class registers. Teachers or pupils were asked to provide information on the occupations of pupils' fathers. The NFER Reading Test BD and the NFER Non-Verbal Test BD were used to describe the range and mean ability levels of classes observed.

SAMPLING

Two sampling strategies have been previously employed to study classroom events in a representative sample of classrooms. Either a large number of schools have each been visited on one occasion (Duthie, 1970, Hilsum and Cane, 1971) or a more limited number of classrooms have been visited on several occasions (Wilson *et al* 1976). The latter approach was adopted for the current investigation in order to facilitate a detailed survey of school conditions and provision.

However, some constraints on the sampling procedure were applied from the outset of the investigation. These were that the sample schools should be easily accessible from the NICER Research Unit and that the classrooms should be in schools in rural as well as urban districts.

It was for these reasons that the schools were selected from one administrative area in Northern Ireland rather than from the total population of schools. The administrative area of the South-Eastern Area Education and Library Board was selected as it was convenient to the Research Unit and it also included rural as well as urban schools. Chapter Three details the sampling design together with target and achieved samples.

PROGRAMME OF RESEARCH

The consultative meetings which preceded the investigation were completed in December, 1973. The following nine months were spent in designing the main enquiry. Available observation schedules were surveyed and specific schedules for use in Northern Ireland classrooms were developed, piloted and revised.

The main enquiry was begun in September, 1974 with the appointment of a part-time research assistant to the project. The research assistant, who was an experienced teacher, received intensive training in the use of the observation schedules in a sample of schools which were not involved in the main enquiry.

At the outset of the project it was envisaged that teachers would be reluctant to have observers in their classrooms and for this reason it was decided to visit each of the sample of teachers prior to the main study. The initial letter to schools included a statement which described in general terms the aims, methods and extent of the investigation. A short questionnaire requested information on the number of pupils in Primary 6 classrooms and the names of their class-teachers. The visit to each school took place after the return of the completed questionnaire. Only one of the sample of eighteen schools declined to participate in the investigation at this stage. All but one of the 29 Primary 6 teachers within these schools agreed to participate in the investigation following the visit to schools.

The classrooms were subsequently visited on six occasions. Classroom events were sampled by visiting each of the classes twice in the autumn term, twice in the spring term and once in the summer term. A second visit was made in the summer term to each classroom to administer standardized tests of non-verbal and reading ability and an attitude inventory to the pupils.

3: THE SCHOOLS IN THE SAMPLE

The investigation was carried out in a representative sample of schools within the administrative area of the South-Eastern Area Education and Library Board. This chapter describes this administrative area, the sample of schools and some of the characteristics of the teachers and pupils from the Primary 6 classes within the schools.

THE ADMINISTRATIVE AREA

In October 1973 the South-Eastern Education and Library Board assumed responsibility for the provision of educational and library facilities in the South-Eastern part of Northern Ireland. The population of the area is concentrated in the dormitory towns and suburban districts around South and East Belfast, but it is also a rich farming and horticultural district interspersed with small villages and market towns.

In the past the rural districts of this area were served by a network of one- and two-teacher primary schools. However, in the last ten years a substantial number of these schools have been amalgamated into larger and more viable units.

The Area Board's stated policy towards rural provisions as summarised in their publication *Review* (1974) is based on:

a) the desirability of providing education for primary school children in surroundings up to the standard of the late 20th century;

b) a recognition of the important role played by rural schools in the social and communal life of the area and the need to preserve such schools wherever practicable;

c) the requirement to provide efficient instruction by means of a suitably qualified permanent staff, a properly designed curriculum and the provision of modern materials and equipment;

d) the need to ensure the efficient use of public finance by effecting economies of scale wherever possible within the context of the above three objectives.

The Board is also committed to a policy of replacing small outmoded schools. This is a gradual process and in January 1974 there were 53 one- and two-teacher schools in the area, many of which were scheduled for closure in the near future.

In its urban areas the Board pursues a policy of maintaining medium size primary schools (300-500 pupils) serving individual neighbourhoods rather than providing larger central schools. In 1974 there were only eleven schools in the area with individual enrolments of more than 600 pupils.

THE SCHOOLS

The population of schools for this investigation was all the primary schools in the South-Eastern Education and Library Board with more than 26 pupils on the roll. All schools in this area retain pupils from five to eleven years. The 173 schools were stratified according to managerial designation (controlled or maintained) and size (schools with fewer than 235 pupils were distinguished from larger schools). The sampling method employed was that of a stratified random sample with proportional allocation of one in ten.

The stratified population and participating samples are shown in Table 3.1. One school was unable to co-operate in the investigation and was replaced by another school in the same category. Within each school the sample classrooms were those in which there were at least ten per cent of the school's primary 6 pupils. Table 3.1 illustrates the number of classrooms within each category.

Table 3.1: *Population and Sample Stratification*

School Management		Size of School <235 pupils	>235 pupils
Controlled	Total schools	67	47
	Sample schools	7	5
	Sample of P6 classes	7	14
Maintained	Total schools	41	18
	Sample schools	4	2
	Sample of P6 classes	4	3

The sample of small schools was clearly distinguished from that of large schools. The largest 'small' school had a total population of 187 pupils with six teachers and the smallest 'large' school 332 pupils with twelve teachers. The large schools were urban schools with non-teaching principals and the small schools were rural schools with teaching principals.

RURAL SCHOOLS

The 11 small rural schools were situated in quiet surroundings either at the centre of a village or at a crossroads adjacent to a place of worship. None of these schools was in a remote rural area. In all but one instance the principals of the schools were male and in all but the two largest of these schools the sample classes were taught by the principal. There was no secretarial assistance in any of these schools and the principal usually arranged with an assistant teacher for a number of free periods for administrative duties. Seven of the eleven schools were without a telephone.

The physical characteristics of the schools were closely associated with the age of the school. Three schools built in the last century were scheduled for closure in the near future. Two of these schools were still heated by coal fires, which were in striking contrast to the new television set which each small school had acquired from the Area Board at the beginning of the year. In two schools children were sitting in rows of iron-framed double desks which in one case were arranged on tiered steps. These schools were generally dark, without indoor sanitation, cloakroom provision, playgrounds or adequate space for physical education. However, one school had acquired modern furniture and the two teachers had created a modern classroom environment within these surroundings.

Two schools which were scheduled for replacement were overcrowded and although they lacked adequate hall, toilet and cloakroom facilities, the classrooms were bright and centrally heated and the schools were surrounded by tarmac playgrounds.

Two of the primary schools had been in their new premises for only one year. One, a four-teacher school, had been formed from the amalgamation of two smaller schools. Each classroom in the school was self-contained with its own toilets, cloakroom and access to the playground. This school had its own kitchen and spacious hall, and it also had a wing containing the staff-room, staff toilets and store-rooms. The other three-teacher school had similar staff facilities but it was constructed according to a semi open-plan design. The classrooms and hall were built around a courtyard and connected by communal areas. A second three-teacher school was in a 19th century building which had just been extensively modernised. Indoor toilets had been built and the classrooms had been carpeted.

Two schools built in the 1960's provided a contrast in style to the newer schools. They had no specific amenities for teaching staff and the classrooms were along a short corridor which both principals had used for a display of library books.

With the exception of the two newly built schools, therefore, the small schools included in the sample were not provided with adequate accommodation for staff or pupils. Two schools had a staff-room, four schools had indoor toilets, six schools had a tarmac playground and six schools had access to a hall which, in three instances, was an adjacent church hall. The schools without a hall were not equipped with physical education apparatus.

Each school had a radio, television set and piano, and six schools also had a tape recorder, record player, duplicator and slide projector. Two schools had none of these aids, though all were available upon requisition from the Area Board.

URBAN SCHOOLS

The seven large schools in the sample were all in pleasant quiet urban areas. Five of these schools were also enhanced by landscaped surroundings.

The catchment area for four of the urban schools included both public housing estates and private owner residential districts. The largest school in the sample had been built to accommodate children in an overspill estate in the suburbs of Belfast where families were being rehoused following slum clearance programmes in the city. Two schools were situated in middle-class neighbourhoods with a high proportion of professional and managerial families.

There was a male non-teaching principal in each school and with one exception, the schools had secretarial assistance. In each case the principal and secretary had their own rooms and telephones. In the five controlled schools the principal's office housed equipment for taping radio programmes for subsequent use in the upper and lower primary forms.

Each urban school had a staff-room, canteen facilities and a central hall. The hall was generally used for physical education. In one school work was in progress during the autumn term on a new extension and the hall served as a temporary classroom for a Primary 6 class. Six schools had extra hutted accommodation and in two schools Primary 6 classrooms were situated in these huts.

All these schools were in good decorative order with adequate heating, lighting, indoor toilets and cloakroom facilities. Three schools were built in the late sixties, three schools in the fifties and only one school was in a pre-war building. None of these schools had open corridors, but one of the newer schools had been built with inter-connecting self-contained classrooms. Some classes were therefore continually interrupted by teachers and pupils moving around the school.

The front hall in four urban schools was used to display pupils' work, and three schools used the corridors to store and display a central collection of library books. There was a central collection of science equipment in one of the schools and this school, in common with two other schools, also had a central collection of mathematics equipment.

The radio was available to all urban classrooms. One school had a single television set and the other six schools had at least two sets. These sets were stored in either a spare classroom, the hall or canteen. The five controlled schools in the sample each had at least one tape recorder, a record player and slide projector, but neither of the maintained schools had acquired these aids.

In general, there was adequate accommodation for both pupils and teachers in urban schools. However, as some classes were housed in hutted accommodation, classroom conditions varied within schools as well as between schools.

THE CLASSES

The sample of classes included one class from each of the eleven rural schools and seventeen classes from seven urban schools. The eleven rural classes were composites which included pupils from at least two year-groups. Four classes in two-teacher schools included all the junior pupils, four classes were formed from three year-groups and three classes included two year-groups. The proportion of Primary 6 pupils in these classes ranged from thirteen to seventy-four per cent.

Fourteen of the urban classes were drawn exclusively from the Primary 6 classes. Pupils were either allocated to classes by age or allocated so that classes were matched for ability. However, in two schools the least able pupils in the Primary 6 year-group were assigned to a composite class with Primary 7 pupils. In a third school the youngest Primary 6 pupils were assigned to a class with Primary 3 pupils.

The size of the urban classes ranged from 27 to 40 pupils with a mean of 32.8. The rural classes tended to be smaller than their urban counterparts and ranged in size from 17 to 33 pupils with a mean of 26.5. Table 3.2 illustrates the differences in the distribution of class size in rural and urban schools and also the extent of overlap between the size of the two groups of classes.

Table 3.2: *Size of classes by school type.*

Class size	Rural classes (N = 11)	Urban classes (N = 17)
15 - 20	3	0
21 - 25	2	0
26 - 30	2	8
31 - 35	4	4
36 - 40	0	5

One rural class was in a 'boys only' school. One urban school had changed from a 'boys only' to a coeducational school and less than a quarter of the pupils in the two Primary 6 classes in this school were girls. The proportion of girls in the other classes varied from a quarter to three-quarters. There was a similarly wide variation in the social class composition of the classes. The percentage of pupils with fathers in non-manual occupations was used as an index of the social background of the class. In urban classes the proportion of pupils with fathers in non-manual occupations ranged from seven to eighty per cent. In six of these classes in two schools more than half of the pupils came from middle-class backgrounds and in six classes from three other schools less than twenty per cent of the pupils were from middle-class backgrounds.

None of the rural classes was predominantly middle-class. The proportion of pupils with fathers in non-manual occupations ranged from seven to forty-one per cent and in six classes less than twenty per cent of the pupils were from middle-class homes. In general, there was a higher proportion of pupils with fathers in non-manual occupations in urban classes than in rural classes (Table 3.3).

Details of the class composition of each of the 28 classes in the sample are included in Tables C.3.1 and C.3.2 in Appendix C.

The NFER Reading Test BD and NFER Non-verbal Test BD were completed by pupils in 27 classes. One principal in a rural school would not agree to the testing programme. Table 3.3 shows the mean reading attainment and ability level obtained for pupils from non-manual and manual backgrounds in rural and urban schools.

Table 3.3: *Mean (M) reading and non-verbal ability scores for pupils from manual and non-manual backgrounds in rural and urban classes.*

		Manual	Non-manual	All pupils
READING TEST BD				
Rural pupils	M	94.89	106.02	97.46
	S.D	13.37	14.40	14.38
Urban pupils	M	96.06	107.07	100.91
	S.D	12.93	12.93	14.03
All pupils	M	95.58	106.85	99.76
	S.D	13.11	13.24	14.23
NON-VERBAL TEST BD				
Rural pupils	M	93.42	101.59	95.30
	S.D	12.80	12.78	13.23
Urban pupils	M	95.12	105.27	99.58
	S.D	13.39	13.58	14.38
All pupils	M	94.43	104.51	98.17
	S.D	13.17	13.48	14.14

F Tests: RURAL V URBAN PUPILS

Reading $F = 9.8$; $df = 1;742$ $p < 0.01$
Non-verbal $F = 15.42$; $df = 1;742$ $p < 0.001$

NON-MANUAL V MANUAL PUPILS

Reading $F = 127.35$; $df = 1;742$ $p < 0.001$
Non-verbal $F = 100.15$; $df = 1;742$ $p < 0.001$

Wilson (1973) noted that although a number of studies carried out in Northern Ireland found that rural pupils performed less well than urban pupils on tests of ability and attainment, the evidence did not indicate 'whether rural pupils were educationally disadvantaged by reason of rural isolation *per se*, or whether the disadvantage is largely, if not wholly, explicable in socio-economic terms' (p.112).

In the current investigation there was a higher proportion of pupils from non-manual backgrounds in urban schools (44%) than in rural schools (33%). Regression analysis was adopted in order to examine whether the differences in mean attainment and ability between pupils in rural and urban schools shown in Table 3.3 were explicable in terms of these pupils' background differences rather than in relation to the type of school attended.

A series of analyses were carried out in which the dependent variables consisted of each pupil's standardised scores on tests of reading attainment and non-verbal ability, and the two independent variables consisted of the pupils' social class (indicated by whether or not the pupil was from a non-manual background) and whether or not the pupil attended a rural school.

When the contribution of the independent variables to variation in reading attainment was examined, social class, which was entered into the regression equation before the effects of school type, explained 14.65 per cent of the variation in test scores. The additional variance explained by school type was slight (0.13%) and non-significant (F = 1.77; df = 1;741). The variation in test scores between rural and urban schools was therefore almost wholly explicable in terms of differences in the socio-economic backgrounds of the pupils in rural and urban schools.

With non-verbal ability as the criterion in further pupil-based analyses social class contributed to 11.9 per cent of the variation in test scores. The additional variation explained by type of school was smaller (0.54%) but statistically significant (F = 4.56, df = 1;741, $p < .05$). Although the contribution of school type was slight the variation in non-verbal test scores between rural and urban schools remained significantly different even when pupil background differences were controlled.

It is clear, however, that although the current study confirmed previous findings which suggested that rural pupils performed less well than urban pupils on tests of reading ability and attainment, these differences were, as Wilson (1973) suggested, largely explicable in socio-economic terms.

THE TEACHERS

The sample included 30 teachers in the 28 classrooms. Two teachers left their schools during the course of the project. The principal of a rural school took maternity leave and a teacher left an urban school to take up an appointment in another school. In these cases both the original teachers and their replacements were in the sample.

Nine of the teachers of rural classes were also the principals of their schools. Only three rural teachers, including temporary teachers, were assistant teachers. In contrast, there were thirteen assistant teachers, three probationers and two vice-principals in the urban schools.

Three-quarters of the teachers of rural classes had more than ten years' experience, including two principals due for retirement at the end of the school year, and none had less that three years' experience. Although a third of the teachers in urban schools also had more than ten years' experience, a third of these teachers had less than three years' experience. Three-quarters of the teachers in rural schools and two-thirds of the teachers in urban schools were male. The age, experience, sex and training of the sample of teachers are detailed in Appendix C.3.4.

SUMMARY REVIEW

Two groups of schools were identified in an area sample of schools. Rural schools were clearly distinguished from urban schools. Rural schools were small schools with a teaching principal and a maximum school roll of 187 pupils (6 teachers). Urban schools were larger with a non-teaching principal and a minimum school roll of 332 pupils (12 teachers). The major differences between the two groups of schools as described in this chapter were associated with their size and location.

Urban schools had at least one staff room, but a staff room was available in only three rural schools. Urban schools invariably had a central hall and all but one of these schools also had access to a separate canteen, whereas only six rural schools had access to a hall and only six schools had canteen facilities.

The classes in rural schools were composites which included pupils from at least two year-groups, whereas all but three of the classes in urban schools were drawn exclusively from the Primary 6 year-group. There were higher proportions of pupils with fathers in non-manual occupations in urban classes than in rural classes. The mean reading attainment and non-verbal ability scores of pupils from non-manual backgrounds were found to be significantly higher than the comparable scores of pupils from manual backgrounds. When differences in the social backgrounds of pupils in urban and rural schools were controlled differences in reading attainment and non-verbal ability between the rural and urban samples were slight.

Comparisons between teachers of the sample classes in rural and urban schools revealed that the rural teachers also tended to be the principals with at least ten years' experience, whereas, the Primary 6 teachers in urban schools tended to be assistant teachers with at least three years' experience.

In general, therefore, the evidence suggests that differences in the size and location of urban and rural schools were associated with differences in these schools' facilities and class composition. The teachers of the Primary 6 age-group were also found to be distinguished by age and experience.

4: CLASSROOM CONDITIONS AND MATERIAL RESOURCES

Each of the classes in the sample had its own classroom. Although pupils from most classes moved to other classrooms and teachers for non-academic subjects, they spent the greater part of their day in their own classroom with their class teacher. This chapter describes the accommodation and equipment provided in these classrooms. It continues with a description of the range of text books, work cards amd mathematical apparatus available for the class and concludes with a discussion of the library facilities provided in the classroom, school and neighbourhood.

CLASSROOM ACCOMMODATION

All but two classrooms were situated in the main school building. Two classrooms in urban schools and six classrooms in rural schools were not completely self-contained in that they provided access to other rooms or were in an open environment. However, none of these classrooms was organised to take account of an open-plan design.

Classroom accommodation, including floor space, display board area, sound insulation, lighting, heating and ventilation was assessed on eleven indices derived from Morris (1966) and Laing (1970). These indices together with the number of classrooms rated as inadequate, adequate or good are included in Appendix C.4.1. Following the procedure adopted by Laing the number of classroom characteristics rated as poor or inadequate were summed to form a classroom adequacy scale. The less adequate the accommodation the higher the scale value. The maximum score on this scale was eleven. The classroom with the least adequate accommodation in the present enquiry had a score of five. This was a classroom in a rural school scheduled for replacement. It had no display board areas, a drab appearance, poor artificial lighting and heating and it was used for access to other rooms. The distribution of the adequacy index scores for rural and urban schools is shown in Table 4.1.

Table 4.1: Accommodation: *Distribution of accommodation inadequacy scores for rural and urban classrooms.*

	Number of inadequate feature					
Classes	0	1	2	3	4	5
Rural (N = 11)	4	2	2	1	1	1
Urban (N = 17)	8	4	3	1	1	0

Four rural and eight urban classrooms were assessed as adequate on all indices, whereas three rural and two urban school classrooms had three or more inadequate characteristics. The two most inadequate urban classrooms were those situated in hutted accommodation. The floor area in both rooms was cramped and in one classroom the ventilation was poor, while the other room had no display boards and a drab appearance. The three less adequate rural classrooms also had limited floor space and all were used for access to other rooms. One class in the sample was initially housed in the school hall but was subsequently moved to a modern classroom. In this case a mean value for the two locations was used as a measure of the accommodation experienced by this class. Overall the difference in the accommodation index for rural and urban classrooms was slight.

CLASSROOM EQUIPMENT

In addition to rating the accommodation, the basic facilities in the classroom were also assessed on an index derived from Morris (1966). This index encompassed eight items of furniture and was scored by summing those items not present in the classroom. These items included modern tables, storage cupboards and built-in units, free-standing and built-in shelves, extra table(s) for display purposes, a large wall blackboard and a sink. The number of rural and urban classrooms with each of these items of equipment is shown in Appendix C.4.2. The distribution of the equipment adequacy index is illustrated in Table 4.2.

Table 4.2: Equipment: *Distribution of equipment inadequacy index for rural and urban classrooms.*

	Number of inadequate feature					
Classes	1	2	3	4	5	6
Rural (N = 11)	2	1	2	3	2	1
Urban (N = 17)	1	4	5	6	1	0

The classroom with the least adequate accommodation was in a rural school scheduled for closure in the near future. It was furnished with only two of the designated items of basic equipment. These were a small storage cupboard and extra tables for models. There were no shelves or storage units in the room. The children sat at desks with iron supports and the teacher wrote on a small free-standing blackboard.

Over half the rural classrooms and forty per cent of the urban classrooms lacked at least four of the designated items of basic equipment. Three classrooms, two of which were in new rural primary schools and a third in an urban school, had all but one of the eight items specified. However, the overall difference between the adequacy of equipment in rural and urban classrooms was slight.

CLASSROOM MATERIALS

The materials available in each of the classrooms were assessed by the observers in consultation with the teachers. The materials surveyed included text books in mathematics, English and environmental studies, work cards and mathematics apparatus. There was no apparent consensus on the material requirements of an upper primary school classroom. The ratings of these materials, in accordance with previous research (Anthony, 1967, Rosenshine, 1971) were therefore based upon the range or variety of books and apparatus available for the class. Overall there were 22 different dictionaries, 69 different English text books, 37 different mathematics text books, 21 different history text books and 26 different geography text books or series available in the twenty-eight classrooms. The most popular titles in each subject area are tabulated in Appendix C.4.3.

Table 4.3 illustrates the range of text books, work cards and graded reading series titles available in rural and urban classrooms. It should be noted that the table does not take account of either the number of different volumes within a series or the total number of books or work cards available for the class. For example, in classrooms with only one or two text book series there tended to be class sets of these titles, whereas there were not necessarily class sets of all the series available in classrooms with a wide range of text book titles.

Table 4.3: *Numbers of rural and urban classrooms with given number of different text book, work card and graded reading series titles.*

Materials	Rural classrooms No. of titles				Urban classrooms No. of titles			
	0	1	2	3+	0	1	2	3+
TEXT BOOKS								
English	0	1	3	7	0	1	5	11
Mathematics	0	3	2	6	1	1	3	12
History	3	6	1	1	1	14	0	2
Geography	4	3	1	3	1	13	1	2
GRADED READING SERIES	1	1	4	5	0	11	3	3
WORK CARDS								
Mathematics	4	3	2	2	11	3	3	0
English/Env. studies	2	2	3	4	7	6	2	2

Table 4.3 shows that in the majority of classrooms there were at least two sets of mathematics and English text books. Only one teacher had no mathematics text books. This teacher, unlike the other Primary 6 teacher in the same school, preferred to base the mathematics curriculum on her own notes, work cards and the television series 'Mathematics Workshop'.

All classes but one used at least one graded reading series. However, rural teachers tended to use a number of different series to accommodate the wider age and ability range in their classes, whereas urban teachers tended to use only one reading series. One teacher in a rural school used a selection of novels rather than reading series for group reading lessons and two other teachers used novels as well as reading series in their classrooms.

Published or teacher-produced work cards were available for English and environmental studies in ten of the urban classrooms and all but two of the rural classrooms. Mathematics work cards were less popular. There was at least one set of mathematics work cards in twelve classrooms but only two of the twenty-eight classes had access to three or more sets of these cards.

Two classes in rural primary schools had neither geography nor history text books and two other rural classes had a set of atlases but no geography text books. One urban class had no geography text books and another class had no history text books. One teacher did not teach history and another did not teach geography. In four classrooms, therefore, teachers did not rely on text books for teaching either history or geography but preferred to use work cards, reference books or their own notes.

In general, the range of work cards and text books was equally diverse in urban and rural classrooms. There was no evidence to suggest that rural schools had less adequate material provision than the urban schools. Indeed the only statistically significant difference between the groups of classrooms favoured the rural school, which tended to have a wider range of English work cards ($t = 2.47$, $df = 26$, $p < .05$).

MATHEMATICS APPARATUS

The mathematics apparatus was assessed according to the number of different types of material available. These materials included scales, trundle wheels, capacity measures and geometric shapes. Table 4.4 illustrates the availability of mathematics apparatus for the twenty-eight classrooms.

Table 4.4: Mathematics apparatus: *Number of rural and urban classes with access to different items of apparatus.*

	Number of different item			
	0	1-5	5-10	11+
Rural classes (N = 11)	0	2	7	2
Urban classes (N = 17)	1	2	0	14

The eight classes in three urban schools with a central collection of mathematics apparatus were assessed as having the widest range of mathematics materials. A further six urban classes and two rural classes had a wide range of mathematics materials in their individual classroom stores. However, one urban class did not have access to mathematics apparatus even though these materials were available in the other Primary 6 classroom in the school. Overall, the urban classes tended to have access to a wider range of mathematical materials ($t = 2.11$, $df = 26$, $p < .05$). The provision of a central collection in these schools was particularly important as it enabled all teachers to benefit from the available mathematical materials.

LIBRARY PROVISION

There were three sources of library books in the primary school classrooms. Nine of the classes regularly visited the neighbourhood public library, half the classes had access to a central school collection of books and, with one exception, there was a collection of library books in each of the classrooms.

CLASS LIBRARY PROVISION

The School Library Service provided by the South-Eastern Area Education and Library Board supplied each upper primary school classroom with an allocation of some eighty books. Those teachers in schools situated near the library headquarters were able to select their books directly from this central collection. The other schools in the area were visited twice a year by a mobile library. In twelve classrooms books were selected from this mobile library by the teachers and a group of pupils. In four classrooms the pupils themselves selected the books and in six classrooms the teachers selected the books.

In one school a teacher with special responsibility for the library selected the books for all the upper primary school classes and used these books to form a central collection. However, three of the Primary 6 teachers had borrowed reference books in block loans from the public library and used them to form small class collections of library books and one of these teachers had used her own money to purchase a range of novels for the class.

In only four of the rural and one of the urban classrooms was the class library solely provisioned by the School Library Service. In the other classrooms the teachers used their requisition allowance to purchase novels or reference books for the class. The teachers estimated the numbers of fiction and non-fiction titles in their class library in relation to the number of pupils in their class. Table 4.5 illustrates the proportion of non-fiction and fiction titles in rural and urban classrooms.

Table 4.5: Class library books: *Proportion of fiction and non-fiction titles in class libraries in rural and urban classrooms.*

	Number of books per pupil				
	None	>1	1	2-5	5+
FICTION TITLES					
Rural classes (N = 11)	0	2	2	8	1
Urban classes (N = 17)	1	2	3	8	3
NON-FICTION TITLES					
Rural classes (N = 11)	0	2	1	7	1
Urban classes (N = 17)	1	2	4	8	2

The difference in the number of fiction and non-fiction titles per pupil between rural and urban classrooms was slight. Seventy per cent of the classes had two or more fiction titles per pupil and sixty-four per cent of the classrooms had two or more non-fiction titles per pupil. However, only one rural and one urban classroom had a library which included over five fiction and five non-fiction titles per pupil.

In all but one of the twenty-seven classrooms with library provision, library books were displayed in an open location on shelves or free-standing racks. All but four of the teachers distinguished fiction from non-fiction titles on the shelves. Six teachers further graded books by topics and five of these teachers also attempted to grade the books according to their readability level.

Pupils in the majority of classes borrowed one or two books to read both in school and at home. However, pupils from three urban classes were not allowed to take their library books home. One class had access to library books only during a library period, whereas most other classes were encouraged to read their library books when they had finished their seat-work activities.

Records of the books read by pupils were kept in all but two classrooms. Fourteen teachers retained the library cards, one teacher kept a record of the books read by each pupil in a notebook, pupils from two other classes filled in the appropriate column of a wall chart and pupil librarians kept the library cards for seven classes. The majority of pupils (68%) were able to change their books whenever they required a new book. However, there were regular library periods in ten classes and pupils from eight of these classes changed their books at these times.

SCHOOL LIBRARY PROVISION

Fourteen classes in five urban schools not only used their class libraries but also had access to the school's central collection of library books. In two of these schools, however, this central collection was small. In both schools there was a limited number of reference books and a set of encyclopaedias in a small bookcase in the staff-room, but the Primary 6 teachers reported that their classes rarely used these books.

In three urban schools there was a central collection of library books which was accessible to Primary 6 classes and was organised by a teacher with a special responsibility allowance. In these schools the books were circulated by a card loan system and the library shelves were labelled.

In one school the library books were arranged along the corridors with the front covers displayed. The library included fiction and non-fiction titles which could be borrowed by pupils at any time and consulted in the classrooms. Pupils used this library either individually or in groups when they required a book for a project or if they wanted to read a book for pleasure after they had finished other work.

In a second school the library was displayed in the entrance hall of the school. It was in an attractive corner with carpeted flooring and the front covers of the books were displayed. Pupils from a Primary 6 class which did not have a class library selected books from this collection once a week during a library period but the other three Primary 6 classes in the school used this library infrequently. These teachers sent pupils to the library only when they required a specific title.

The central reference library in the third school included only non-fiction titles. These were displayed on free-standing shelves in the corridor and in one of the art rooms. The library included 415 books supplied by the School Library Service and 142 books supplied from school funds. These books were divided into subject categories including history, geography, interests, etc. Each category was given a code and a coloured tab. Books were numbered sequentially within each category. Each class was supplied with a complete list of the books together with their reference numbers. These lists were prominently displayed in the Primary 6 classrooms and teachers were encouraged to teach the pupils how to select an appropriate title before they went to the library for 'a book'.

Six classes from two of the three school with a large central library made regular supervised visits to their neighbourhood public library in which tuition was also provided in the use of the library. Two rural classes visited the same branch library in their local village. The librarian, who was also a trained teacher, was observed showing the classes how to use the index system and how to locate the required books on the shelves. She also provide games and stories to encourage pupils to select a wide range of reading material.

These eight classes visited their public libraries either once a fortnight or once every three weeks. During these visits pupils were encouraged to borrow one or two books for their personal use. Pupils in a third rural school were encouraged to use the mobile public library which regularly parked near the school.

SUMMARY REVIEW

The charting of classroom accommodation, equipment, text book, work card, mathematics and library resources revealed a wide range of provision among the twenty-eight classrooms. With few exceptions, these classrooms were not overcrowded and they tended to be provided with adequate heating, ventilation and lighting. Nevertheless, more than half the classrooms lacked storage units, and a high proportion of classrooms had neither large wall blackboards, modern tables nor sinks.

Generally, classes were supplied with a variety of mathematics and English text books but only one set of geography and history texts. Rural classes tended to have a wider range of work cards than urban classes but the urban classes had access to a wider range of mathematics apparatus. The library facilities in both rural and urban schools were largely provided by the School Library Service, and books were mainly stored in classrooms. The condition and range of these books was generally of a high standard.

This survey of classroom resources was carried out in the school year 1974-1975 when money was available to finance any reasonable request made by the teachers and schools. The range of materials within classrooms was therefore not dictated by economic considerations, but was dependent on both the individual teacher's perceived needs and the curriculum followed within the schools. In urban schools the teachers were frequently, but not always, circumscribed in their choice of materials by an agreed school curriculum. Newly appointed teachers in these schools had no influence at all on the resources in their classrooms as these had been ordered during the previous school year. Teachers in rural schools, on the other hand, were not generally constrained in their choice of text books and classroom materials.

Overall, the weight of evidence did not reveal differences in the material provision of urban and rural classrooms. Although urban schools were clearly distinguished from rural schools in relation to location and size, there was little evidence to support the view that the pupils and teachers within these schools had differential access to material resources.

5: THE TEACHERS

Bennett and Jordan (1975) suggested that 'the practice of categorising all teacher behaviours in terms of ill-defined dichotomies is not likely to lead to further progress in the evaluation of teaching styles' (p.20). They examined six major areas of classroom behaviour in order to describe elements of the global terms 'progressive' and 'traditional.'

The current investigation, though conducted prior to that reported by Bennett and Jordan, also included a teacher self-completion questionnaire devised to examine specific areas of classroom practice. It included questions on class management and organisation, homework policy, curriculum content and instructional strategies. A check-list was also devised to record teachers' assessment procedures and motivating techniques.

This information was collected for 30 teachers in the sample of 28 classrooms. Two teachers left their schools during the project and in these cases the original teachers and their replacements were included in the sample. The first section of this chapter describes differences and similarities between the reported teaching approaches of teachers in rural and urban schools. The interrelationships between these variables is examined in the second part of the chapter.

TEACHING APPROACHES IN RURAL AND URBAN SCHOOLS

The 30 teachers completed a 14-item inventory devised by Barker Lunn (1970) to measure progressiveness and traditionalism in the teacher's approach to curriculum content. The frequencies with which these teachers provided seven curriculum activities in each area are detailed in Table 5.1. The majority of teachers (73%) reported that they provided lists of spelling for pupils to learn every day. However, although two-thirds of the rural teachers

Table 5.1: *Percentages of teachers in rural (R) and urban (U) schools who provided 'traditional' and 'progressive' lessons with specified frequencies*

		Daily	at least weekly	at least monthly	at least termly	less than once a term
'TRADITIONAL' ACTIVITIES						
Writing class-prepared composition	R	0	58	33	8	0
	U	11	56	22	6	6
Learning lists of spelling	R	58	33	0	0	8
	U	83	17	0	0	0
Formal grammar	R	0	17	58	0	25
	U	6	72	11	6	6
Having test on any subject	R	0	8	25	42	25
	U	0	33	28	28	11
Formal sums	R	17	83	0	0	0
	U	67	33	0	0	0
Problem sums	R	8	75	8	8	0
	U	17	67	11	0	6
Saying/learning tables by rote	R	17	50	17	0	17
	U	22	22	11	0	44
'PROGRESSIVE' ACTIVITIES						
Free activity	R	8	42	8	8	33
	U	0	22	22	11	44
Art lesson	R	0	100	0	0	0
	U	6	94	0	0	0
Pupils working/helping each other in groups	R	25	42	25	8	0
	U	11	56	17	6	11
Writing stories	R	8	75	17	0	0
	U	11	67	11	0	11
Projects where child does own research	R	0	50	8	33	8
	U	0	61	6	28	6
Nature study walks	R	0	8	0	67	25
	U	0	0	6	28	67
Practical arithmetic	R	17	75	0	8	0
	U	11	67	11	0	11

reported that they provided mathematics tables for pupils to learn at least once a week, only two-fifths of the teachers in urban schools required pupils to learn tables each week and a further two-fifths rarely required pupils to learn these tables.

Formal 'sums' were provided at least weekly by all of the teachers. However, a significantly higher proportion of teachers in urban schools favoured daily exercises in formal arithmetic (67%) than teachers in rural schools (17%). The only other significant difference between the reported practices of teachers in rural and urban schools related to formal grammar, which was provided at least weekly by 78 per cent of the urban teachers but only by 17 per cent of rural teachers.

Class prepared compositions were provided weekly by the majority of teachers (57%) as were problem 'sums' (70%). A third of the teachers in urban schools but only eight per cent of the teachers in rural schools set weekly subject tests. However, a quarter of the teachers in both types of school set monthly tests.

In general, teachers' reports suggest that, with the exception of formal grammar in rural schools and mathematics tables in urban schools, pupils in the majority of classrooms were regularly engaged in 'traditional' activities. Testing was not a regular occurrence in the majority of classes. However, teachers did not appear to include spelling tests within this category and the results may therefore be slightly ambiguous.

The 'progressive' activities in the Barker Lunn inventory included activities which, with two exceptions, also tended to be carried out regularly in the sample classes. Nature study walks were a rare occurrence in all but one rural class and free activity occurred weekly in only 22 per cent of urban classes but 42 per cent of rural classes.

All teachers reported that they provided art lessons at least weekly and the majority of teachers also provided practical arithmetic (70%), story writing (70%) and projects (57%) on a weekly basis.

In general, therefore, teachers' self-reports suggest that these teachers had retained their 'traditional' practices as well as having introduced the more 'progressive' elements into their curriculum. However, although the activities labelled as traditional by Barker Lunn in 1970 would clearly still be designated as such, it is probable that few teachers would now consider activities such as art lessons, free activity or writing stories as other than part of the conventional primary curriculum.

EVALUATION

The aspects of evaluation included in this study referred to teacher practices in correcting pupils' work. The observers recorded whether the teachers:

a) always marked written work,

b) marked class work such as mathematics problems themselves or allowed pupils to mark their own work,

c) required corrections from pupils.

The observer also noted whether the teacher used stars to motivate pupils. Table 5.2 details the percentages of teachers who were recorded as employing each of these evaluative practices.

The majority of teachers (87%) marked pupils' written work, but only a third of the teachers marked classwork such as mathemathics problems themselves. Other teachers usually read out the correct answers and allowed pupils to correct either their own work of that of their neighbours. Seventy-seven per cent of the teachers required pupils to correct their errors after their work was marked.

None of the teachers in rural schools used 'stars' but half of the teachers in urban schools employed this form of motivation. Six of these teachers also used display charts to record the number of stars gained by each pupil.

CLASSROOM ORGANISATION

The teachers' questionnaire included questions which referred to teachers' practices in allocating seats and seating pupils, and their attitude to pupil movement in the classroom. The majority of teachers in urban schools (61%) but only a quarter of the teachers in rural schools reported that they allocated all pupils to individual seats. In two classes pupils had no special seats of their own; in six classes children chose their own seats, and in eight classes some, but not all, pupils were allocated to specific seats.

Table 5.2: *Percentages of teachers in rural and urban schools who used specific organisational and evaluative practices.*

	Rural teachers (N = 12)	Urban schools (N = 18)
Evaluation		
Uses stars	0	50
Always marks written work	75	94
Mainly corrects problems	42	28
Requires pupil corrections	75	78
Classroom Organisation		
All seats allocated	25	61
Seats allocated by ability	42	44
Pupils remain in same place	42	22
Pupils seated in groups	50	39
Pupils move only with permission	0	28
Homework		
Two or more regularly	25	39

Teachers who allocated some or all pupils to their seats were asked to detail their policy for assigning pupils to seats. Two-fifths of the teachers placed children of similar ability or attainment close together. Three teachers said they placed children 'strategically' around the room, one teacher placed boys and girls together, five teachers placed friends together and one teacher placed children of different ability together.

Half the teachers in rural schools and two-fifths of the teachers in urban schools seated the pupils in groups rather than rows. The four teachers who taught in rural classrooms which were not equipped with modern tables arranged the desks in rows whereas the teachers with modern tables arranged them in groups. In urban classrooms the pattern of seating was not so closely associated with the availability of modern tables. Half the teachers working in classrooms provided with modern tables arranged these tables in rows and a third of the teachers in classrooms with double or single desks arranged these so that pupils sat in groups.

A third of the teachers did not encourage pupils to change the seats they had been allocated to or had selected at the beginning of the year. Temporary pupil movement around the classroom was not so restricted. All but five teachers allowed pupils to move without permission if it was for certain specified reasons, and a third of the teachers allowed pupils to move without permission more or less all the time. Pupils were generally allowed to consult the teacher, consult books or collect books without asking permission.

HOMEWORK

Teachers were asked to indicate their practice in setting homework. All teachers set homework at least two or three times a week and a third of the group set two or more homeworks at least four nights a week. Fifty-seven per cent of the teachers expected pupils to spend between 15 and 35 minutes on their homework but twenty per cent expected the average pupil to spend over 45 minutes per night at this work.

The percentages of teachers who indicated that they gave each of seven subjects as homework are shown in Table 5.3. In addition, three teachers reported that they set English homework, two teachers set pupils work in religious education, and homework in art, history, geography and nature study were each reported by one teacher.

Table 5.3: *Percentages of teachers in rural and urban schools who set specific subjects for homework*

Homework	Rural teachers (N = 12)	Urban teachers (N = 18)
Spellings	75	100
Tables	33	89
Mathematics problems	58	72
Reading	75	72
Discovery work	75	56
Writing	67	61
Project	33	33

It is notable that all teachers in urban schools and nine of the teachers in rural schools gave pupils spelling to learn for homework. In addition, two-thirds of the teachers required pupils to learn tables for homework.

INSTRUCTIONAL GROUPING

The teachers were asked to indicate the methods they most regularly used to teach English, mathematics, religious education and environmental studies. Twenty-eight of the thirty teachers reported that they taught religious education to the class as a whole. Two teachers who taught in rural schools taught religious education to groups of pupils rather than the class unit. Table 5.4 illustrates the reported methods of teaching English, mathematics and environmental studies, distinguishes between class, group and individual approaches to teaching. However it must be stressed that the majority of teachers also reported that as well as teaching the class or groups of pupils, they also taught English and mathematics to pupils individually. Only one teacher used an exclusively individual approach for teaching any of these subjects and this teacher only used this approach to teach mathematics.

Table 5.4: Methods of teaching: *percentage of teachers in rural (R) and urban (U) schools reporting specific approaches to English, mathematics and environmental studies.*

Method of teaching	English		Mathematics		Environ. Studies	
	R	U	R	U	R	U
Taught as a class	33	50	17	44	42	67
Class and similar ability group	25	11	17	28	42	6
Class and mixed ability group	0	11	0	11	0	11
Similar ability groups	25	28	42	17	0	0
Mixed ability groups	17	0	17	0	17	17
Individually	0	0	8	0	0	0
Number of teachers	12	18	12	18	12	18

A third of the rural teachers and half of the urban teachers taught English to the class as a unit. Environmental studies was taught to the class unit by two-thirds of urban teachers and two-fifths of the rural teachers. However, class teaching appeared to be less widely employed for mathematics. Sixty per cent of rural teachers and forty-four per cent of urban teachers grouped pupils into similar ability groups for this subject.

In general, mixed ability groups were less popular than similar ability groups for teaching purposes. The only two urban teachers who grouped pupils on a mixed ability basis were in the same school. They both reported that they grouped pupils of different abilities together in order that the brighter pupils could help the other pupils in the group. The mixed ability groups in two rural classes were not selected by the teachers but they were composed of pupils from the same 'grade' or age-group. The majority of teachers in rural schools reported that they adopted a group approach to the teaching of English, mathematics and environmental studies. Teachers in urban schools tended to favour class grouping although a high proportion of these teachers also grouped pupils specifically for work in mathematics and English.

DIMENSIONS OF TEACHING

Factor analysis[1] was employed to examine the relationships among the reported teaching practices. The 24 variables entered into the analysis included 12 dichotomous variables describing class organisation, evaluation, homework policy and whether teachers reported an emphasis on class teaching or teaching ability groups for mathematics and English. Twelve of the 14 activities from the Barker Lunn inventory were also included in the factor analysis. As art lessons were provided on a weekly basis by all but one teacher and nature study walks were infrequent in all but two classes these activities were excluded from the analysis.

Table 5.5 shows for each of the eight factors the loadings which equalled or exceeded 0.4. The patterns of association revealed in the factor analysis are complex and clearly not in line with a simple dichotomy between progressive or informal practice on the one hand and traditional or formal practice on the other, although factor III does suggest a formal-informal dimension in its linking of formal grammar, formal sums and restricted movement.

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[1] A principal components analysis of 24 teacher variables yielded eight components with *eigen* values in excess of unity. These were rotated by Varimax to the structure summarised in Table 5.5 and detailed in Appendix C.5.1.

Table 5.5: Teaching Style: *Summary of the major factor loadings after Varimax. (decimal points omitted).*

	I	II	III	IV	V	VI	VII	VIII
Composition				-72				
Spelling						48	46	
Formal grammar			82					
Projects					36		55	
Tests								68
Free activity				70				
Group work		66				46		
Formal 'sums'			59					
Problem 'sums'					86			
Practical arithmetic					86			
Stories	64					47		
Tables	80							
Restricted movement		41	79					
Seats allocated						73		
Seating by ability				-46		49		
Seating in groups							67	
Stability of seating							62	
Use of stars								83
Written work marked		51						
Problems marked				83				
No correction required	69	41						
Emphasis on class teaching		-81						
Emphasis on teaching ability groups							73	
2+ homework						71		

Factor VI suggests a structured-unstructured approach to organisation. It distinguishes those teachers who regularly set one or more topics for homework. These teachers also allocated pupils to specific seats and seated pupils by ability. They tended to require pupils to learn spellings and write stories and to have pupils working or helping each other in groups.

Factor V indicates that teachers who tended to provide frequent practice in formal 'sums' also tended to provide frequent practice in arithmetic. These teachers also showed some tendency to provide regular project work. The frequency with which pupils were expected to learn mathematics tables is not linked with the frequency of the other mathematics activities included in the Barker-Lunn scale. It is, however, associated, in Factor 1, with the frequency with which teachers asked pupils to write stories.

Factor VIII distinguishes evaluative practice and extrinsic motivation in its linking of frequent tests and the use of stars. Factor VI indicates that teachers who marked pupils' problem work in class also tended to provide frequent free activity but infrequent class-prepared compositions.

Teaching approach is represented in two factors. In Factor II teachers who did not emphasise class teaching tended to restrict pupil movement in the classroom, to mark pupils' written work and to report that pupils in their class regularly worked in groups. In Factor VII teachers who emphasised the teaching of similar ability groups for mathematics and English also tended to seat pupils in groups rather than rows. These teachers did not encourage pupils to move once they had selected a seat.

In general, an emphasis on group work was linked with restricted movement (Factor II) and a structured approach to classroom organisation (Factor VI). It was not associated with the seating arrangement in the classroom. However, during the programme of visits to classrooms it was noted that teachers interpreted the statement 'pupils working/helping each other in groups' in a variety of ways. Two teachers who had a structured approach to classroom organisation regularly asked their more advanced pupils to assist their slower colleagues; a third teacher grouped pupils for reading lessons in which pupils heard each other reading, and in other classes pupils worked in groups for craft work but not for other subjects. In only a few classes were pupils observed working co-operatively on mathematics problems or environmental studies projects. Moran (1971) in a survey among primary school teachers highlighted the tendency to refer to widely different types of organisation when using the term 'integrated day.' A similar ambiguity is here associated with the definition of 'group work.' However, the visits to classrooms also indicated that teachers tended to agree in their interpretation of terms such as 'formal grammar', 'practical arithmetic'' and mixed or ability grouping.

The analysis was computed for a relatively small sample of teachers. However, it is interesting to note that Bennett and Jordan (1975) report a varimax analysis of 28 questionnaire items relating to the teaching practices of 468 primary teachers which yielded seven factors. In this analysis one factor distinguished group work, a second factor concerned seating arrangements in the class, in a third factor homework policy was linked with frequency of test and a fourth factor distinguished teachers who marked and graded pupils' work and who also tended to give stars to pupils who produced the best work.

Although the variables included in the anlysis reported by Bennett and Jordan differed from those included in the analysis carried out for the present investigation, both analyses yielded solutions which demonstrated that a basic dimension of classroom practice did not exist. Instead, they revealed complex patterns of association among teaching variables and distinguised the teachers' approach to seating pupils, from their approach to evaluation and group work.

SUMMARY REVIEW

The *Northern Ireland Primary Education Teachers' Guide* (1974) presented an approach to the work of the primary school which endorsed many of the practices suggested by the Plowden Report (1967). It argued against a rigid division of the curriculum into separate subjects and favoured a more flexible approach towards unifying the curriculum. It considered that although physical education, music and poetry could be conveniently taken as a class unit, if 'the uniqueness of each child, disparity in rates of growth and wide range of normality are taken fully into account in school organisation teaching on an individual or a group basis is likely to be an important feature' (p.9). The pattern of teaching endorsed by the Guide laid stress on exploration, discovery, discussion and recording rather than premature verbal instruction or rote learning.

The practice of carrying out end-of-term examinations and of making lists which show order of achievement in class but take no account of development or effort were questioned, and the Guide further noted that 'prize days and the award of stars for 'good' work do not foster the pursuit of knowledge for its own sake, an important aspect of work in school. Practices which are continued today because they existed yesterday must be reassessed' (p.13).

In general, the survey of teaching practice as revealed in teachers' report indicates that although teachers have adopted some of the practice endorsed by the Teachers' Guide they have also retained practices which are not in accord with its approach to primary education. The majority of teachers, for example, reported that the pupils in their classes regularly carried out projects, practical arithmetic and worked in groups. Yet there was no evidence to suggest that teachers had adopted a unified approach to the curriculum. All but one teacher required pupils to learn lists of spellings and class teaching was important in the majority of urban if not in rural classrooms.

The analysis of the associations among reported teaching practices upheld Bealing's (1973) opinion as to the inappropriateness of the use of dichotomies such as traditional-progressive and formal-informal in the description of teaching style. She suggested that 'a classroom may be progressive in some respects but not in others and it may well prove necessary to characterise classrooms in terms of several dimensions rather than one' (p.235). The factor analysis of teaching variables in this investigation yielded eight factors or independent dimensions of classroom behaviour, and although a formal- informal dimension was suggested in the linking of formal sums, formal grammar and restricted movement, this was only one of the several dimensions which characterised teaching practice in the present enquiry.

6: PUPILS' ATTITUDES

Pupils' attitudes towards the subjects (e.g. geography) and activities (e.g. doing my own project) which occurred in their classrooms were assessed using a twenty-eight item inventory devised for the enquiry. This inventory also provided information on the range of activities available within the sample of primary classrooms.

Each of the 27 items in the inventory was read to all pupils in 26 classes during the testing programme. (Two classes were not included in the sample). Each pupil scored his questionnaire according to whether he liked the activity very much, quite liked the activity, or did not like it at all. A fourth category was marked if the pupil or class did not take part in the specified activity during the year.

Table 6.1 details the 27 activities and the number of classes in which pupils participated in these activities. All pupils reported that they spent at least some time on spelling exercises and also that the library provision enabled each pupil to spend time reading library books. Twelve activities were available in 25 of the 26 classes. However the limited activities available in one class accounted for six of these items. Pupils in this urban class reported that they did not read reference books in school and they were not taught geography, art, drama, music, craftwork, needlework, science and nature study. In addition, they did not watch television, listen to the radio in school or carry out individual or class projects. This class was exceptionally limited in its range of activities.

Pupils in a class in one rural school were not taught nature study, science, maths problems from the blackboard or tables and they did not carry out class projects. However, pupils in 16 classes participated in no less than 25 of the 27 specified activities and pupils in two rural classes and six urban classes reported that they had participated in all of the activities.

Table 6.1: Classroom Activities: *Number of classes participating in specified activities.*

26 classes	25 classes	≤ 24 classes
Mathematics	Music	Maths problems (24)
Religious Education	Geography	Needlework (24)
Games	Painting	Watching tv. (23)
English exercises	History	Nature study (23)
Spelling	Acting	Doing individual projects (21)
Writing stories	Reading reference books	Listening to radio (21)
Reading library books	Physical Education	Class projects (20)
	Discussions	Science (17)
	Reading aloud	
	Tables	
	Writing exercises	
	Craftwork	

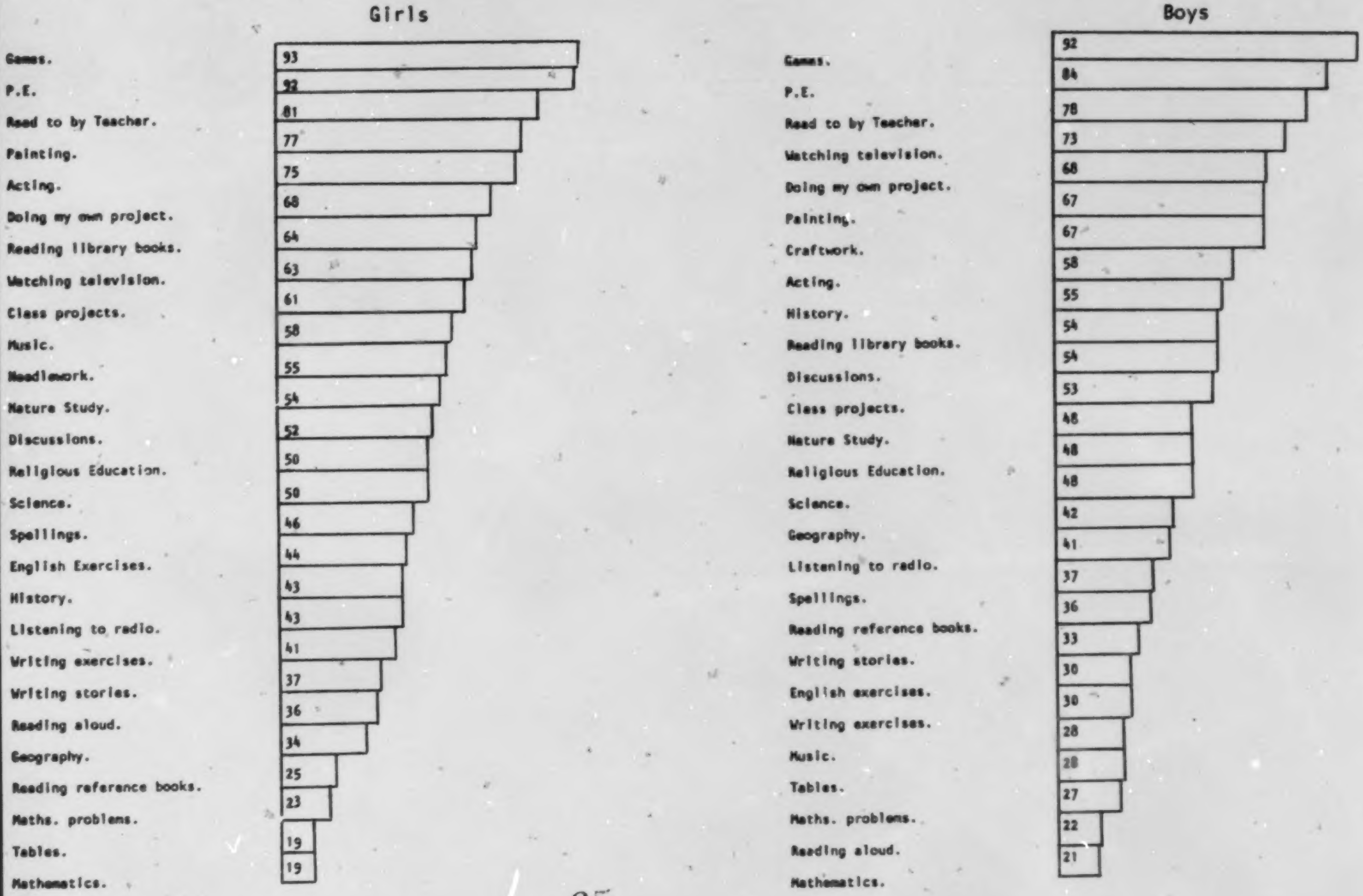
Only one rural class did not have facilities for physical education. However, the only activity which was consistently not available in rural schools was science, which was only taught in three of the ten rural classes as compared with 14 of the urban classes, although in one urban school boys had science while the girls went to needlework.

In six of the classes pupils did not carry out class projects and in five classes pupils did not do individual projects but in only one rural and one urban class was neither activity available.

Figure 6.1 shows the 28 class activities arranged in order of preference according to the percentage of boys and girls who considered that they liked these activities very much. These percentages relate to the total number of pupils involved in each activity. The proportion of boys and girls who disliked the activities are included in Appendix C.6.4 together with the overall totals for each activity.

Games were almost universally enjoyed as was physical education, although it was enjoyed by more girls than boys. The aesthetic

Figure 6.1: Pupils' attitudes to specific activities: *Percentage of boys and girls who stated that various activities were liked very much.*



subjects, including art and needlework or craft, were enjoyed by over half the pupils. While the majority of girls liked music, forty per cent of the boys disliked this subject and only twenty-eight per cent of the boys expressed a positive liking for it.

The majority of pupils enjoyed hearing stories read by the teacher, (71%), drama (65%), reading library books (58%) and discussions (53%). Spellings, English exercises, writing exercises, writing stories and reading aloud in class were less frequently enjoyed by pupils and generally preferred by significantly more girls than boys. However, only a quarter of the girls enjoyed reading reference books compared with over a third of the boys. Although few pupils expressed a liking for reference books, the majority of pupils (68%) enjoyed doing their own projects and class projects were also popular. It should be noted in this connection that project work was not always based on reference books. In some classes pupils used project kits. In other classes the project arose from visits to places of interest and pupils were given detailed questionnaires to complete together with art work and creative writing on the topic.

Mathematics and the two associated activities of problems and tables were favoured by less than a quarter of the pupils and disliked by more than forty per cent. Significantly more boys (28%) than girls (19%) enjoyed working with tables but some forty per cent of boys and girls disliked this activity.

In general, none of the class activities was disliked by more than half the pupils and with the exception of mathematics most of the activities were disliked by no more than a small minority of pupils. The most popular activities were those which required no written work from the pupils, although projects were popular among two-thirds of the group. The pattern of differences revealed in the comparisons between boys and girls consistently showed that class activities were generally more popular with girls than with boys.

PREDICTING PUPILS' ATTITUDES

Variations in pupils' attitudes have been examined in relation to differences between boys and girls. Further analyses were conducted in order to determine to what extent pupils' attitudes to activities common to all classrooms were predictable from the characteristics of the school, classroom, teacher and pupil. Pupils' attitudes to mathematics, English exercises, spelling, reading library books and writing stories were therefore defined as the criterion variables in a series of multiple regression analyses.

An hypothesis-testing approach was used to select sets of predictors. The classroom resources considered potentially important for attitudes to mathematics were the range of mathematics text books, mathematics apparatus and mathematics equipment, whereas the classroom resources considered potentially important for attitudes to spelling, English exercises, writing stories and reading library books were the range of English text books, work cards and library books. Similarly, the teaching activities which were considered important for mathematics were the frequency of formal sums, practical arithmetic and learning tables in the classroom, whereas the frequency of learning spelling lists, formal grammar, writing class-prepared compositions and writing stories were considered important for attitudes to the English activities.

The variables describing school, pupil and teacher characteristics were common to the five analyses. These were the experience and sex of the pupil's class teacher and the pupil's age, sex and social class (whether or not the pupil was from a non-manual background). Standardised Reading Test BD scores were taken account of for attitudes to English and standardised Non-verbal Test BD scores were used for pupils' attitudes to mathematics. The pupils' schools were designated as either rural or non-rural for the analyses.

Table 6.2 shows for each of the five areas of pupil attitude the percentage variation accounted for by all the predictors in

Table 6.2: *Percent variation in pupil attitudes to each of five classroom attitudes.*

	MATHEMATICS		ENGLISH				
Predictor sets	d.f	Maths	d.f	Eng. ex.	Sp.	Reading lib bks.	Writing stories
PUPIL CHARACTERISTICS	4;729	2.72***	4;727	3.45***	2.19**	2.62***	0.74
SCHOOL CHARACTERISTICS	1;729	0.72*	1;727	1.28***	0.10	0.34	0.07
TEACHER CHARACTERISTICS	2;729	1.03*	2;727	0.52	0.88*	0.87*	1.70*
CLASSROOM RESOURCES	3;729	1.40*	3;727	2.63***	2.11***	0.44	3.51***
TEACHING VARIABLES	3;729	1.91**	4;727	0.52	0.97	0.55	1.80*
All predictors	13;729	7.12***	14;727	9.64***	6.09***	4.36**	5.35***

Significance of F: *for $P < 0.05$; **for $P < 0.01$; ***for $P < 0.001$

combination. It also shows the magnitude and significance of the unique contributions[1] made by variables describing the type of school, level of classroom resources, frequency of class activities and pupil and teacher characteristics. As has previously been indicated the variables included in the subsets are not identical for the prediction of attitudes to mathematics and English activities.

Table 6.2 shows that only a small proportion of the full range of differences in pupil attitudes was explained by the sets of predictor variables. Nevertheless, within these limitations pupil characteristics emerged as consistently important predictors of pupil attitudes, as were the variables describing the level of classroom resources provided for the pupils. Teaching variables were important for attitudes towards mathematics and writing stories but not for attitudes towards the other English activities.

The subsets of variables included in the regression analyses contributed least to the explanation of the variation in pupils' attitudes to reading library books. They contributed most to variation in attitudes towards English exercises and mathematics.

PUPIL ATTITUDES TOWARDS MATHEMATICS

When the contribution of each of the 13 predictor variables to variation in pupils' attitudes to mathematics was examined

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[1] The unique contribution of each set of variables comprises its further addition to assigned variation beyond that contributed by the combination of the remaining variables. For example, in the initial analysis for mathematics attitude the thirteen non-criterion variables were made available for prediction. In the second analysis the pupil characteristics variables were excluded in order to determine to what extent predicted variation fell short of that predicted when pupil characteristics was included. In this way it was possible to distinguish the unique contribution of the pupil characteristics as distinct from that portion of the pupil characteristics contribution which was in common with, or predictable from, the remaining sets. In subsequent analyses each of the other subsets was excluded in a similar manner.

(Appendix C.6.2). It was found that four variables predicted at least one per cent of the variation in mathematics' attitudes. These were the pupil's social class and ability level and whether or not the class teacher regularly taught formal sums and whether or not the pupil was regularly required to learn mathematics tables. Although more frequent formal sums was associated with less favourable mathematics attitudes, more frequent work with mathematics tables was associated with positive attitudes.

In general, although predictor variables were selected only if they were thought to be potentially important for attitudes towards mathematics, these variables accounted for less than ten per cent of the variation in attitude. Regression left much unexplained. It clearly did not reveal the major concomitants of the unfavourable attitudes to mathematics expressed by forty per cent of the sample of pupils. However, it did indicate that pupils with unfavourable attitudes tended to be of lower ability and from manual rather than non-manual backgrounds. In addition, these pupils tended to be taught by teachers who stressed formal work in arithmetic but who did not regularly ask pupils to learn mathematics tables.

PUPIL ATTITUDES TOWARDS ENGLISH

The final regression solutions for the prediction of attitudes towards the four English activities (Appendix C.6.3) showed that sex of pupil was the most important predictor for attitudes towards English exercises, spelling and reading library books but not for attitudes to writing stories. Girls were found to have significantly more favourable attitudes to these activities than boys (Appendix C.6.1). The other pupil biographical variables had a negligible influence on attitudes towards English activities.

The range of text books in the classroom was important for pupil attitudes towards spelling and writing stories. Positive attitudes to these activities were associated with a limited rather than an extensive choice of text books. Similarly, positive attitudes towards English exercises were associated with a limited range of library books in the pupils' classroom. However, the range of English work cards in the classroom was also an important predictor for attitudes towards English exercises and in this instance the association was positive.

An unexpected finding was that although the frequency of learning spelling lists had a negligible influence on pupils' attitudes toward spelling and the frequency of writing stories had a similarly small influence on attitudes of pupils to this activity, the frequency of formal grammar was important for pupils' attitudes to spelling.

SUMMARY REVIEW

Pupils in all but a few classes were able to participate in a wide range of class activities. The only activity which was consistently not available in rural schools was science. In comparison, project work was carried out by all but two classes. However, the nature of these projects varied from pupils writing on a topic using work cards as source materials to a class investigation of the history of the school neighbourhood.

The majority of pupils had favourable attitudes towards those activities which required least written work (being read to by the teacher, reading library book, craftwork, discussions, etc.). Project work was also enjoyed by two-thirds of the population. However, activities such as writing exercises, spelling and reading aloud to the teacher were not so popular and less than a third of the pupils had favourable attitudes towards mathematics, tables or mathematics problems.

Regression analyses were employed to examine the predictive efficiency of biographical, school, teacher and classroom characteristics for pupils' attitudes towards five aspects of the curriculum. The analyses revealed that sets of predictor variables chosen as potentially important for attitudes to mathematics and English activities accounted for only a small proportion of the full range of differences in pupils' attitudes. These attitudes were therefore, relatively independent of the variables included in the present survey.

Some of the results of the regression analyses were unexpected. Pupil ability and social class were important for attitudes to mathematics but not for attitudes to English activities. Furthermore, when attitudes were predicted by the level of classroom resources these associations tended to be negative so that, although a wide range of work cards was associated with positive attitudes to English exercises, narrow rather than wide ranges of English text books or library books were associated with positive attitudes to English exercises, spelling and writing stories. However, it should be noted that no attempt was made to assess the contents of these books or whether or not they were appropriate for pupils within the classrooms. Nevertheless, it is clear that an environment which includes a wide variety of materials does not by itself stimulate pupils' interests as Wilson and Trew (1975) noted 'The problem is clearly not so much one of the resources as such, but rather of their appropriateness to particular conditions and their perceptive use in schools and classrooms' (p.19).

7: SCHOOL ACTIVITIES

Each class teacher was responsible for organising the class time-table. However, in both small and large schools teachers were constrained in planning their daily activities by organisational factors which included the distribution of teaching time and breaks, the availability of the hall or television rooms, shared teaching responsibility and regular visits to the swimming pool or library. In addition, the time-table also had to accommodate such events as class trips to places of interest, the school concert, or the activities of student teachers and other visitors.

This chapter describes the regular and occasional events sampled during visits to the schools. Each class was visited during each of the school terms. Four morning and two afternoon visits were made to each class. The distribution of visits to the 28 classrooms were arranged so that out of the eight and a half hours of class time sampled throughout the school year, three hours were in the afternoon and five and a half hours in the morning. In practice, the afternoon sessions comprised thirty-three per cent of the total sampled time. Every effort was made to distribute these class visits on different days of the week and only one class was visited on the same weekday on more than two occasions.

In order to record the normal activities of the classes sampled during the school visits, the observers accompanied the classes to locations outside their classrooms. They also recorded class activities during those occasions when the classes were being taught by a teacher other than the class teacher. The information reported in this chapter therefore refers mainly to events sampled during 268 hours of class time. However, teachers were also asked to detail infrequent events such regular and occasional out-of-school visits. The reports of these events therefore refer to all such activities rather than the sample of occasions during which the classes were observed.

SCHOOL HOURS

In Northern Ireland schools the principal has a measure of latitude in how he approaches the school day. He can, for example, adjust the starting and finishing time of the school to local circumstances. Similarly, the principal may select the appropriate distribution and length of time for breaks during the school day. Table 7.1 reveals the variation in the starting and finishing time, the total length of the school day and the time allocated to teaching sessions within each of the sample of schools.

In these schools the day started between 9.00 a.m. and 9.40 a.m. and finished for upper primary school pupils between 2.50 p.m. and 3.30 p.m. In all but one school the day was divided by a short morning break and the lunch interval into three teaching sessions. The teaching sessions may therefore be defined as the times when the pupils and teachers were not at lunch or break, but this also included time for assembly and organisational tasks in the morning. The schools tended to allocate three-fifths of teaching time to the morning and two-fifths to the afternoon.

The length of the average school day was 5 hours 51 minutes. In rural schools the average length of the school day was 20 minutes shorter than the 6 hour day of the urban schools. The urban schools tended to favour a day which started at 9.00 a.m. and finished at 3.00 p.m. The rural schools, on the other hand, started at 9.20 a.m. or later, but also tended to finish at 3.00 p.m. However, the urban schools generally had longer break intervals and there was not a significant difference between the total length of teaching sessions in the two types of school.

It is possible to contrast the pattern of school hours in the Northern Ireland sample with the picture revealed by Hilsum and Cane (1971) in their investigation, *The Teacher's Day*. These authors found that in the South of England the length of the average school day was 6 hours 39 minutes divided into four teaching sessions by the lunch interval, morning and afternoon breaks. Although school hours varied the proportion of the day allocated to teaching was found to be consistently between sixty-nine per cent and seventy-five per cent of the total school day. In Northern Ireland, although the school

Table 7.1: *Time-tabling for the school day in the schools sampled.*

SCHOOLS Rural	1ST SESSION	BREAK (in mins)	2ND SESSION	LUNCH (in mins)	AFTERNOON SESSION	TOTAL DAY (in mins)	TOTAL TEACHING (in mins)
01	9.30 - 10.45	15	11.00 - 12.35	40	1.15 - 3.15	345	290
02	9.20 - 11.00	10	11.10 - 12.15	45	1.00 - 3.00	340	285
03	9.25 - 10.50	10	11.00 - 12.30	30	1.00 - 3.00	335	295
04	9.20 - 10.50	10	11.00 - 12.30	45	1.15 - 3.15	355	300
05	9.30 - 11.00	10	11.10 - 12.30	40	1.10 - 3.10	340	290
06	9.30 - 11.00	10	11.10 - 12.45	30	1.15 - 3.05	345	295
07	9.15 - 10.45	10	10.55 - 12.20	55	1.15 - 3.00	345	280
13	9.20 - 11.00	15	11.15 - 12.30	30	1.00 - 3.00	340	295
14	9.40 - 11.30	10	11.40 - 12.30	45	1.15 - 3.30	350	295
15	9.30 - 11.00	10	11.10 - 12.00	60	1.00 - 3.00	330	260
16	9.00 - 10.45	15	11.00 - 12.30	30	1.00 - 2.50	350	305
Urban							
08	9.15 - 10.45	15	11.00 - 12.30	40	1.10 - 3.10	355	300
09	9.00 - 10.30	10	10.40 - 12.00	60	1.00 - 3.00	360	290
10	9.00 - 10.40	10	10.55 - 12.30	45	1.15 - 3.05	365	305
11	9.00 - 10.30	20	10.50 - 12.00	50	12.50 - 3.00	360	290
12	9.10 - 10.40	15	10.55 - 12.25	60	1.25 - 3.25	375	300
17	9.00 (No morning break)		12.40	40	1.20 - 3.00	360	320
18	9.00 - 10.45	15	11.00 - 12.30	45	1.15 - 3.00	360	300

day was an average of 49 minutes shorter than in England, the principals allocated between seventy-nine per cent and eighty-nine per cent of the day to the teaching sessions. These sessions had an average length of 4 hours 54 minutes as compared with the average of 4 hours 48 minutes allocated to teaching in English schools.

Schools in Northern Ireland and England would therefore appear to provide similar times for teaching, but in Northern Ireland the break-time is much shorter. The distribution of these teaching sessions provided a framework for the activities of the class as none of the schools sampled had their day further segmented into lesson periods by the principal.

OUT-OF-SCHOOL ACTIVITIES

In nine schools class activities were circumscribed by regular out-of-school commitments. In five schools classes visited the local swimming pool once a week. Two of these classes were in rural schools and seven classes were in three of the urban schools. These schools were all in close proximity to a public swimming pool, with the exception of one school which had access to a pool in a nearby secondary school. The other schools in the sample were not generally within reasonable travelling distance of such facilities.

The swimming period usually occupied a teaching session before or after morning break or an hour of the afternoon session. Two swimming periods were observed. In each case the class teacher accompanied the class to the pool and assisted the instructor during the session.

Pupils in eight classes in four schools made regular fortnightly supervised visits to the neighbourhood public library. None of these schools participated in swimming lessons.

There was evidence of occasional out-of-school visits in six schools. One class in an urban school was observed on a nature study walk and another class in a rural school was observed in the school garden where children were learning to plant seeds. In three urban schools there was evidence of work being carried out following or in anticipation of a class trip. Pupils from both classes in one school visited the local market. All the Primary 6 pupils from a second school visited a local market town during the summer term, two of the four Primary 6 classes in this school had visited a farm earlier in the year, and the Primary 6 classes in a third school visited the sea-side during the summer term. In each class pupils were given a questionnaire to complete following their visit. Pupils' artistic impressions of the places they visited were displayed in the classroom and there were also displays of material collected during the trip.

Only two rural classes were observed after such visits away from the school. In both instances these were not trips but walks to areas of interest in the locality. Pupils from one class were preparing an exhibition on the history of the Lagan Canal and were interviewing the older residents as well as visiting places of interest. Similarly all pupils from a second school visited a local castle and followed this visit with a discussion and written work on the history of the area.

Fourteen teachers did not use out-of-school visits to stimulate classwork. Their school trips were not followed up with class activities but were a social occasion for pupils and teacher. Those teachers who based classwork on a class visit tended to structure their pupils' work. They prepared cyclostyled sheets for the pupils and followed up this visit with work on related topics. Teachers in urban schools tended to visit places at a distance from the school, whereas teachers in rural schools were concerned to study the neighbourhood.

SHARED TEACHING RESPONSIBILITIES

The classes were taught regularly by teachers other than their class teacher when:

(a) there was team teaching.

(b) teachers exchanged classes for specific subject teaching.

(c) the class was taken by an infant teacher in order to give the class teacher a free period.

(d) the class was divided for craftwork, hobbies etc.

TEAM TEACHING

There was only one example in this survey of teachers combining to teach a specific topic. In one urban school the two Primary 6 teachers chose to combine their classes for history lessons when either one or the other of the teachers taught a specific topic and both assisted in follow-up activities.

SUBJECT SPECIALISM AND TEACHER EXCHANGES

Excluding those occasions when classes were divided for art, craft or physical education, and also teacher absences, there were only eight occasions during the 168 visits to schools when the classes were observed being taught by a teacher other than the class teacher as part of the normal curriculum. These were occasions when either two teachers exchanged classes or the class was taken by an infant teacher while the class teacher had a free period.

In every school in the sample the infants went home earlier than the junior pupils. The infant teachers were therefore available to assist the junior teachers at the end of the day. This practice was observed in all but three rural schools and two urban schools. Generally, the infant teacher helped with the craftwork and taught a portion of the class. However, in one rural school an infant teacher took the principal's class for a 'crossword puzzle' while he carried out administrative duties. In an urban school, a Primary 6 class was observed at 'story-time' with an infant teacher while their class-teacher was available for consultation by parents.

Two classes in one urban school and one class in a second urban school were observed at a music lesson with another teacher while their class-teacher had a free period for carrying out special responsibilities.

Two classes in urban schools were observed being taught music by a teacher from another class while their class-teacher taught these teachers' classes. Conversely the teacher from one urban class went to another class to teach music while his class was being taught French.

These exchanges were particular to urban schools and it is notable that six of the seven examples of co-operative teaching in urban schools involved the teaching of music. There were other reported examples of this type of co-operation but they were not encountered during the school visits.

DIVISION OF CLASSES FOR SPECIFIC ACTIVITIES

During the afternoon visits to schools, boys and girls in 16 classes in 13 schools were observed to divide into single-sex groups for art/craft/needlework activities. Among these classes there was only one in which boys could do needlework and girls craftwork during this time. In a two-teacher school boys were doing needlework during the visit to the school but none of the girls was doing craftwork.

In two other two-teacher schools the infant teacher took the girls for needlework while, in one instance, boys stayed with the principal for craftwork and in the other school the boys played board games. The principal of the fourth two-teacher school did not divide his class for needlework/craft activities but included these activities as part of class project work.

Three principals in larger rural schools were freed for a period while their classes were divided among the other teachers for craft activities. In a fourth rural school the Primary 5 and Primary 6 class was divided according to age and sex into four groups. Each of these groups was combined with another group of boys and girls from other classes for the craft/needlework activities period. One of the two remaining rural schools was a 'boys only' school and the second did not divide the class for art work.

The division of classes by sex for craft/needlework activities was observed in five urban schools. One school did not divide classes and the Primary 6 teachers in a second school did not provide any observable craft activities.

In the other schools the Primary 6 classes were divided into several subsets and these were mixed with pupils from other year groups. The Primary 6 class teachers did not necessarily take one of these Primary 6 groups. One class teacher, for example, took boys from Primary 7 classes. One school not only divided the classes for craft/needlework activities but the Primary 6 girls also went to dancing on one afternoon per week while their class teachers took the boys. In one of the two classes in this school, the boys had a general knowledge quiz at this time.

In general, pupils in this sample of schools were divided into single-sex groups twice a week for craft work. Girls tended to be sewing or knitting during this time. Boys were painting, doing elementary science experiments, making models and even in one case weaving. Girls were observed during art lessons in one urban and four rural classes. In each case these classes were being taught by the class teacher.

MOVEMENT AROUND THE SCHOOL

During thirty-eight per cent of the visits to schools, classes were observed to move to a location outside their classroom. Twenty-five of the 28 classes in the sample were observed in a location other than their classrooms on at least one occasion. Both classes in one urban school and one class in a second urban school were observed at all times in their classrooms.

Table 7.1 details the percentage of visits during which pupils were observed in specific locations. Each class was observed in its own classroom at some time during the visit and then moved to the specified locations during the observation period. Only two urban classes were observed to move twice during a morning or afternoon session.

No class was observed outside its own classroom on every visit to the school, but three rural classes and one urban class were observed outside their classrooms on five of the six school visits.

During six visits to five classes pupils were working not only in their classrooms but also in the corridors, playgrounds or hall. Pupils from one class were using the central library collection. Pupils from a second class were working on their projects in the school hall and three classes were measuring specific features of the school such as the area of the playground.

Table 7.1: *Percentage of class visits observed in specific locations.*

Location	Rural classes (N = 66)	Urban classes (N = 102)
Classroom only	63	61
Hall/canteen/gymnasium	14	11
Class, hall, corridor	5	3
Other classroom	2	8
More than one room	15	11
Playground	8	4
Out of school (swimming, library or trip)	4	5

The playground was being used on three visits to one rural school. The principal of this school considered that pupils should participate in physical exercises for approximately ten minutes each day. As there was no hall in the school pupils did their exercises outside when the weather permitted and in the corridor on rainy days. In three urban classes and one rural class pupils were observed using the playground for football, netball or rounders. On two of these occasions pupils were watching an inter-schools match.

Classes were observed in classrooms other than their own on ten occasions. One rural class changed classrooms in order to allow another class to use the television in its room. In three urban schools classes moved to another classroom to watch television. In each of these instances the television was in a room designed solely for viewing. Classes in urban schools were also observed to change rooms on six occasions for specific lessons with a teacher other than their class-teacher.

In rural schools the school hall was observed in use on nine occasions. Two new rural schools had located the television set in the hall. In both these schools classes were observed watching television on two occasions. In addition, both classes were observed using the hall for physical education. A rural class was observed in the hall watching a film strip about farming and the teacher in a fourth school used the church hall attached to the school for physical education.

In three urban schools classes had access to a canteen as well as a hall. In two schools the canteen was used for viewing television, and in a third school the principal used the canteen to address all the Primary 6 pupils. The hall or gymnasium was used for drama by one teacher. However, the hall or in one case the gymnasium was used primarily for physical education, which was observed in progress on six occasions in three schools.

TELEVISION AND RADIO

Television programmes were viewed at the time of broadcasting as none of the schools sampled had a videotape-recorder. Radio programmes were recorded in five of the urban schools, but in none of the rural schools.

Television was viewed in the Primary 6 classrooms in three rural schools and in the hall in two schools. None of the urban classes viewed television in their classrooms. Three classes used the canteen and three classes used a television viewing room. In contrast, twelve classes were observed listening to the radio or taped radio programmes in their classrooms. One teacher used the radio in the hall for mime and movement, and one class listened to a radio programme in an infant teacher's classroom.

Neither television nor radio programmes were observed on visits to two rural classes and six urban classes. However, teachers' reports suggested that with the exception of one urban school and two classes in a second school, these teachers were using television or radio programmes at some time during the year.

The radio programmes which were being played during the visits to schools were *Singing Together* (8 schools), *Today and Yesterday in Northern Ireland* (3 schools), and *Nature* (1 school), *Man* (1 school), and *Living Language* (1 school).

The principal of one school used the 1.00 p.m. News to stimulate the children's interest in current affairs. The pupils first wrote down the names of towns and countries mentioned on the News and then used their atlases to find these places. The teacher then initiated a discussion on a topic mentioned during the News.

Overall, radio programmes were observed in use on 21 of the 168 visits to schools. Television was observed in use on a further 15 visits. The programmes being watched on these occasions in more than one school were: *World Around Us* (2 schools), *Meeting Our Needs* (2 schools), *Ulster in Focus* (2 schools), *Music Time* (2 schools), *Figure it out* (2 schools). *Lets look at Ulster, Out of the Past, Finding out* and *Mathematics Workshop* were each observed on one occasion.

The most popular school programmes on television and radio were those concerned with either music or environmental studies. Mathematics and English programmes were infrequently employed as a basis for class activity.

STUDENT TEACHERS

During nine per cent of the school visits student teachers were also in the classroom. These students were attached to eight teachers in five urban schools and two teachers in rural schools. One urban class had two student teachers - one in the autumn and one in the summer term. Two students were observed in their respective classes on both the spring term visits.

Hilsum and Cane (1971) found that in their study of the teacher's day, students were attached to the observed teachers on over ten per cent of the sampled days. They noted that there were five possible situations that occurred during these times.

1). The teacher taught his class while the student observed.
2). The teacher taught part of his class, while the student taught the rest.
3). The teacher observed as the student taught the whole class
4). The teacher was 'free' and the student taught the whole of teacher's class.
5). The teacher taught a class other than his own, while the student taught his own class.

In the present investigation, the first four situations described by Hilsum and Cane were noted, but not the fifth. In two classes the students were merely observers and in a further four classes students were also observing the teacher for part of the visit. The student co-operated with the teacher on four occasions. In one class, for example, two students who were initially observing the teacher were each asked to take a reading group. Students were observed teaching the whole class during 12 class visits and on three occasions students were teaching the class throughout the observation period while the teacher had a free period outside the classroom.

The topics taught by the student were generally concerned with history and geography. Two students talked about life in Ireland. One set up a project on the Eskimos and one a project on the Vikings. Two students took their classes for drama. One student taught the class French and one taught mathematics. At other times, students were observed taking music and physical education lessons, giving spelling tests, and on two occasions, supervising the children's written work. In general, however, students tended to concentrate on their prepared topics rather than on the day-to-day concerns of the school.

OUTSIDE VISITORS AND SPECIAL EVENTS

The classes' activities were observed being interrupted by three types of visitors. These were speakers invited to address the class, visitors who called to speak to the teacher, and pupils and teachers from other classes who came with a message for the class or teacher.

VISITING SPEAKERS

Two visiting speakers were observed during the school visits. All the Primary 6 pupils in one urban school attended a talk on smoking and cancer, which was followed by a visit to each classroom by the speaker. In a rural school the minister from the neighbouring church was observed giving a talk to the class.

OTHER VISITORS

Since nine teachers in rural classes were also the school principals, all visitors to the school were directed to their rooms. A record was made of the callers encountered during the school visits. These included a coalman, a publisher's representative, the postman, the school dentist, the school nurse, a bus-driver, the cook, a priest, an educational welfare officer, a DENI Inspector and a lecturer from the training college. None of these visitors stayed in the class for more than a few minutes. Individually, therefore, they caused little disruption to class activities. However, one principal suggested that cumulatively these visitors could disrupt planned class activities. It is also notable that the list of visitors to rural classes did not include any parents.

The urban school teachers received few visits from adults other than the principal, his secretary or other teachers. However, one teacher spent half-an-hour with a parent whom she had asked to come and speak with her.

INTERRUPTIONS

A record was made of the total number of callers to each class. These included calls by adults and children. However, the record of interruptions was merely a tally of the callers and did not distinguish between pupils and teachers. These interruptions were totalled for the six visits to each class. The mean number of interruptions in rural schools was 4.4. Three classes had only one caller during eight and a half hours observation while at the other extreme one class had ten interruptions. The rural teachers, however, generally had few interruptions from other teachers and pupils.

The mean number of such interruptions in urban classes was 12.4 with a range of 6 to 24 callers. The majority of urban classes had at least two callers during each visit. These were primarily pupils requesting information or delivering a message. Three schools managed to limit such interruptions to less than one per session, whereas four classes in two schools had at least three interruptions per session.

In both of these latter schools the principal was frequently among the class visitors.

SPECIAL EVENTS

Class activities were also interrupted by special events such as the inter-school games noted in two schools and rehearsals for school concerts, which were observed in two urban classes. A third type of event recorded in one school was a meeting of all Primary 6 classes. The principal of this school was concerned about the results of these pupils in the school's mathematics examination and their failure to understand certain concepts. He therefore had called the pupils together to explain these concepts.

SUMMARY REVIEW

The teachers were largely responsible for planning the activities of their classes. They were however constrained by the length of the school day and the times of morning and lunch breaks. The time for teaching sessions within the 28 classrooms varied from 4 hours 20 minutes in a rural school to 5 hours 20 minutes in an urban school which did not have a morning break.

The teachers in all but two rural and two urban schools were also constrained by shared teaching responsibilities for needlework/art/craft lessons. In addition, regular out-of-school visits, television or radio programmes and the availability of the hall, gymnasium or playground could also shape the class time-table. However, two classes in one urban school were only observed in their classrooms with their own class teachers and neither of these classes watched television or listened to the radio.

In a second urban school although the Primary 6 teacher did not have shared teaching responsibilities, the class paid regular visits to the swimming pool and the teacher regularly used television and radio programmes for music and environmental studies. In the other five urban schools teachers shared the teaching of needlework and craft subjects and in four of these schools subject specialists or infant teachers also taught some of the classes during the week.

Rural schools tended to divide classes for art/craft/needlework periods. In addition, if the class was taught by the principal of the school an infant teacher frequently taught the class in the afternoon to enable the principal to carry out his administrative duties.

Student teachers were present in the school on nine per cent of the school visits. They were either observing or teaching the class. When teaching, they tended to concentrate on prepared environmental studies topics rather than the day-to-day concerns of the primary school. However, in some classes teachers were able to give pupils individual tuition while the class was taught by the student and in other classes the student teacher assisted the teacher by either helping pupils individually or working with a small group of pupils.

Nine teachers in rural classrooms who were also the principals of their schools were occasionally interrupted by visitors to the school but they had few interruptions from other classrooms. In contrast, urban classes, which were rarely interrupted by outside visitors, were more frequently interrupted by pupils and teachers from other classrooms.

8: LESSON FORMATS

This chapter is the first of four chapters which detail the results of the programme of systematic observation. The previous sections of the Report have described the physical and organisational aspects of the classroom as sampled from teacher and pupil questionnaires and as recorded by observers during visits to the school. These descriptions were concerned with general aspects rather than specific details of classroom life. In contrast, systematic observation provided detailed records of the day-to-day activities of both pupil and teacher within the classrooms.

Classroom events were recorded while classes were engaged in their normal daily activities. It was therefore possible to examine variations in teachers' approaches to the organisation of their classrooms and to the content of lessons. At the same time, this record of lesson content and pupil grouping provided a framework for subsequent analyses of pupil and teacher activities.

The classrooms were visited on six occasions in order to sample class activities in a variety of settings. Each of the six visits was divided into six consecutive observation cycles. Thirty-six observation cycles were therefore recorded in each classroom. The duration of these cycles was ten minutes during the initial visit and fifteen minutes on subsequent visits. Classroom activities were therefore sampled at regular intervals rather than in relation to naturally occurring divisions of class time.

A context schedule was devised for the project in order to record the content of the observed lessons, the grouping of pupils and the activities of the teachers during observation cycles. Details of the content, development and reliability of this Context Schedule are included in Appendix A.

The present chapter is concerned with the description of the type of lessons observed during 1005 observation cycles. (Three cycles were not recorded owing to shortage of time during two visits to two schools). The lesson format was recorded in terms of five independent facets: lesson content, lesson mode, pupil grouping, task differentiation and lesson orientation.

Each of these aspects of the lesson was coded from the viewpoint of the pupil rather than the teacher, so that lesson content described the subject area in which the pupils were working, whether or not the teacher was also working in this area. For example, the lesson described as mathematics practice referred to pupils working at mathematics exercises, although the teacher could have been engaged in activities relating to other curriculum areas at this time.

LESSON CONTENT

Lesson content referred to the content or subject matter of the lessons as experienced by the pupils and sampled during the observation cycles. Seventeen categories were originally employed to describe the lesson content. (See Figure A.4 in Appendix A for a listing of the categories). Fifteen of these categories referred to the curriculum areas encountered in Northern Ireland primary schools e.g. General English, Music, Religious Education etc. A category entitled 'no lesson' was included to describe those occasions on which the class was not involved in work activities e.g. pupils clearing up [illegible]er art work, walking to the football pitch, etc. The category entitled 'mixed academic' referred to three types of situation. These included the occasions when:

a) the class was split into groups for work within different curriculum areas (e.g. the teacher discussed geography with one group while the rest of the class worked on English exercises).

b) individual pupils were working on exercises within different curriculum areas (e.g. some pupils were working with mathematics exercises and some were working with English exercises as part of an integrated approach to the curriculum).

c) the cycles started with activities in one area of the curriculum and finished with activities in a second curriculum area (e.g. the cycle started with a 'tables' test which was followed by a spelling test).

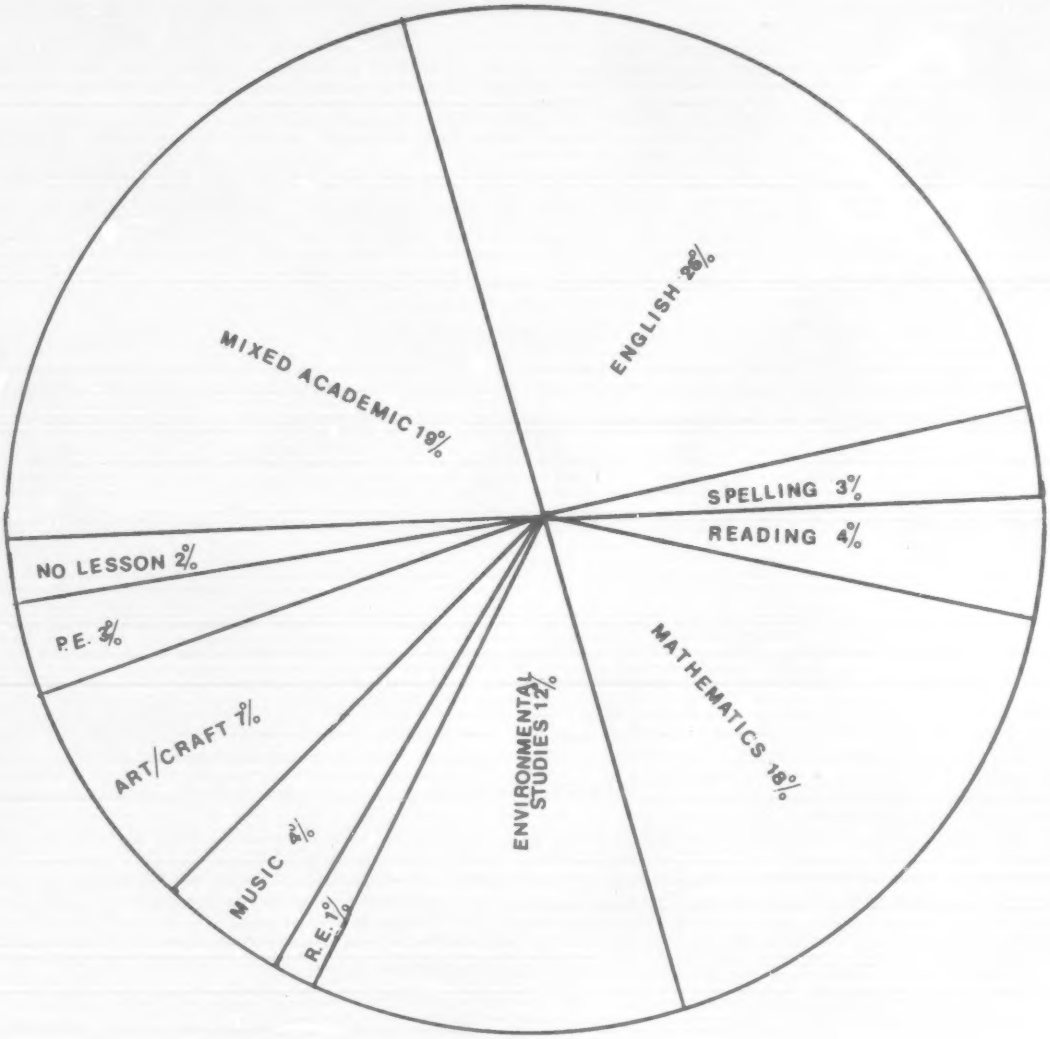
Figure 8.1 graphically represents the proportion of the 1005 observation cycles devoted to the eleven categories used to describe lesson content. Five categories accounted for less than 0.5 per cent of the observation cycles and are not included in this Figure. Irish was not observed either being taught or spoken during any of the visits to schools although it was on the curriculum of one rural class. 'Tables' were the dominant concern of only three cycles although work with 'tables' occurred as part of general mathematics or mixed academic activities on other occasions. French, library studies and intelligence testing were also encountered infrequently. Needlework was the dominant concern of one per cent of the cycles. However, as it was generally associated with art or craft activities, it is represented in the category 'art/craft'.

Figure 8.1 reveals that half the observation cycles involved the whole class working on either mathematics or English. Reading lessons *per se* occupied four per cent of the cycles but frequently English was the dominant class activity when the teacher was hearing reading. Mathematics and English also occurred together during mixed academic activities. The category 'environmental studies' was used to describe the teaching of history, geography and nature study. Twelve per cent of the cycles involved work in this area and one per cent were concerned with religious education.

The category 'mixed academic' was used to describe the content of nineteen per cent of the observation cycles. However, whereas twelve per cent of the cycles in urban schools were categorised as having mixed academic content, this category described thirty per cent of the cycles in rural schools (Appendix C.8.1). This difference reflected the composite grouping of rural classes and the tendency for the teacher to teach one age group while the other age groups continued with seatwork activities.

Because the rural classes spent a third of the observed time in mixed academic activities there were proportionally fewer cyles

Figure 8.1: Lesson Content: *percentages of observation cycles devoted to specific curriculum areas.*



devoted to the other academic curriculum areas as compared with the urban schools. However, the differences between the proportions of cycles in rural and urban classes devoted to non-academic activities were slight.

LESSON MODE

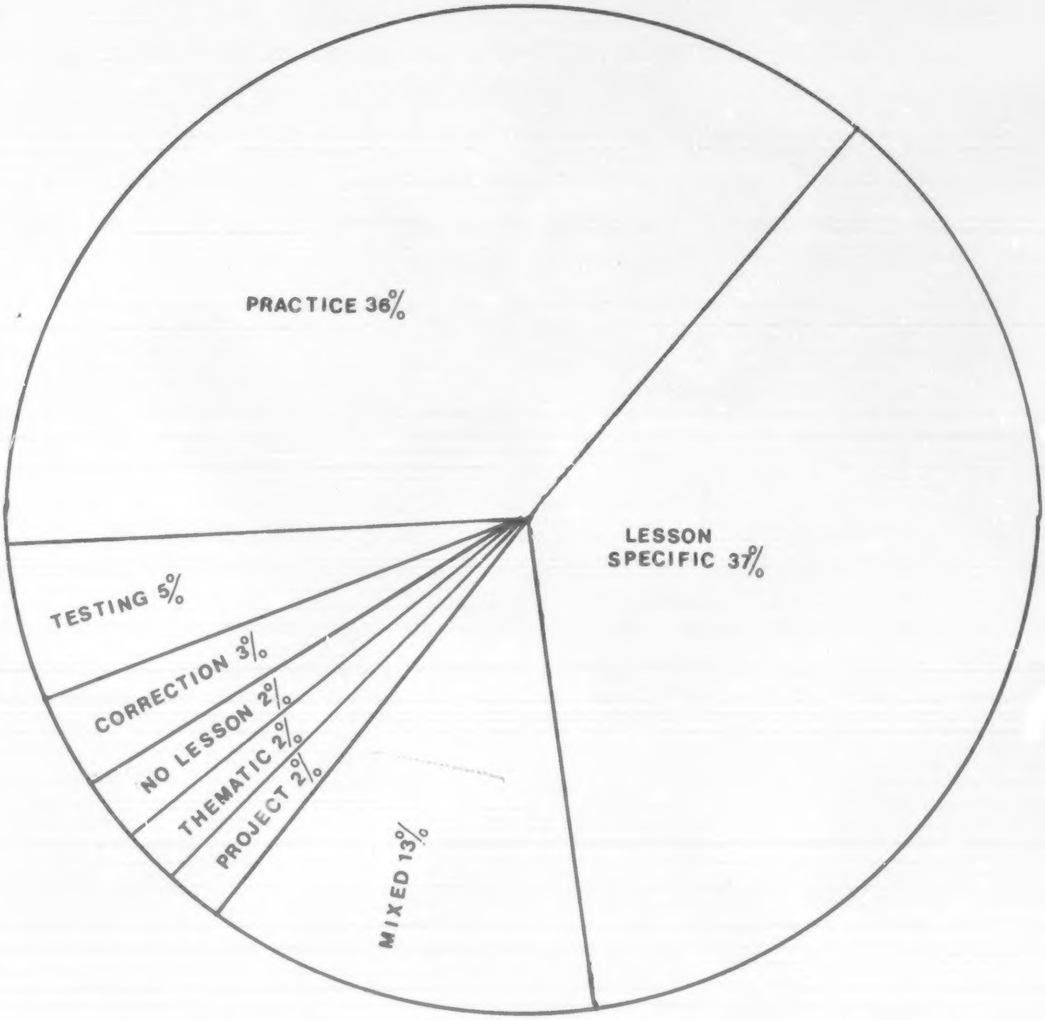
Lesson mode referred to the presentation of the subject matter during an observation cycle. The categories distinguished lessons which were concerned with new material as lesson specific or related to a thematic or project approach to the curriculum. These were contrasted with lessons which involved the practice, correction or testing of acquired knowledge. The eight categories used to describe the lesson mode were:

> *Practice* - the practice of acquired skills.
>
> *Lesson specific* - the presentation of new material or information related to a specific curriculum area.
>
> *Thematic* - subject presented as part of a thematic approach to the curriculum.
>
> *Project work* - subject presented as part of a project involving pupils' own interpretation of material.
>
> *Testing* - the testing of pupils' knowledge or intelligence.
>
> *Correction* - the marking of pupils' work.
>
> *No lesson* - neither pupils nor teacher involved in work-related activities (e.g. tidying room).
>
> *Mixed* - More than one lesson mode (e.g. the teacher taught one group of pupils while other pupils were working at their seatwork). This category was also used when two modes occurred consecutively during a cycle (e.g. a test followed by corrections).

These categories did not refer to the specific content of the cycles. However, if the observation cycle did not sample work-related activities both the lesson mode and the lesson content were categorised as 'no lesson'.

Figure 8.2 graphically illustrates the relative proportion of observation cycles categorised by each of the eight lesson modes. It is apparent that only a small proportion of class time was devoted to either project work or a thematic approach to the curriculum.

Figure 8.2: Lesson Mode: *percentages of observation cycles devoted to specific forms of presentation.*



Similarly, the correction of work occupied only three per cent of the cycles, but it should be noted that the dominant pupil activity frequently involved practice although the dominant teacher activity was correcting pupils' work.

The majority of observation cycles involved either practice or lesson specific activities. Practice was predominant in rural classes (40%) and lesson specific activities were predominant in urban classes (40%) (Appendix C.8.2). There were few observation cycles devoted to project work in rural classes and even less were related to a thematic approach to the curriculum. However, twenty per cent of the cycles in rural schools involved a mixed approach whereas only eight per cent of the urban class cycles were categorised as mixed mode.

PUPIL GROUPING

The pupil grouping categories described the general structure of the class and whether pupils were working independently or co-operatively in pairs, groups or as a class unit. Six categories were used to describe pupil grouping during a cycle. These were:

Independent - pupils were working individually at their desks. The teacher if interacting with pupils was talking to them one at a time.

Groups - pupils were working in groups of at least three pupils.

Pairs - the pupils were working co-operatively in pairs on a task.

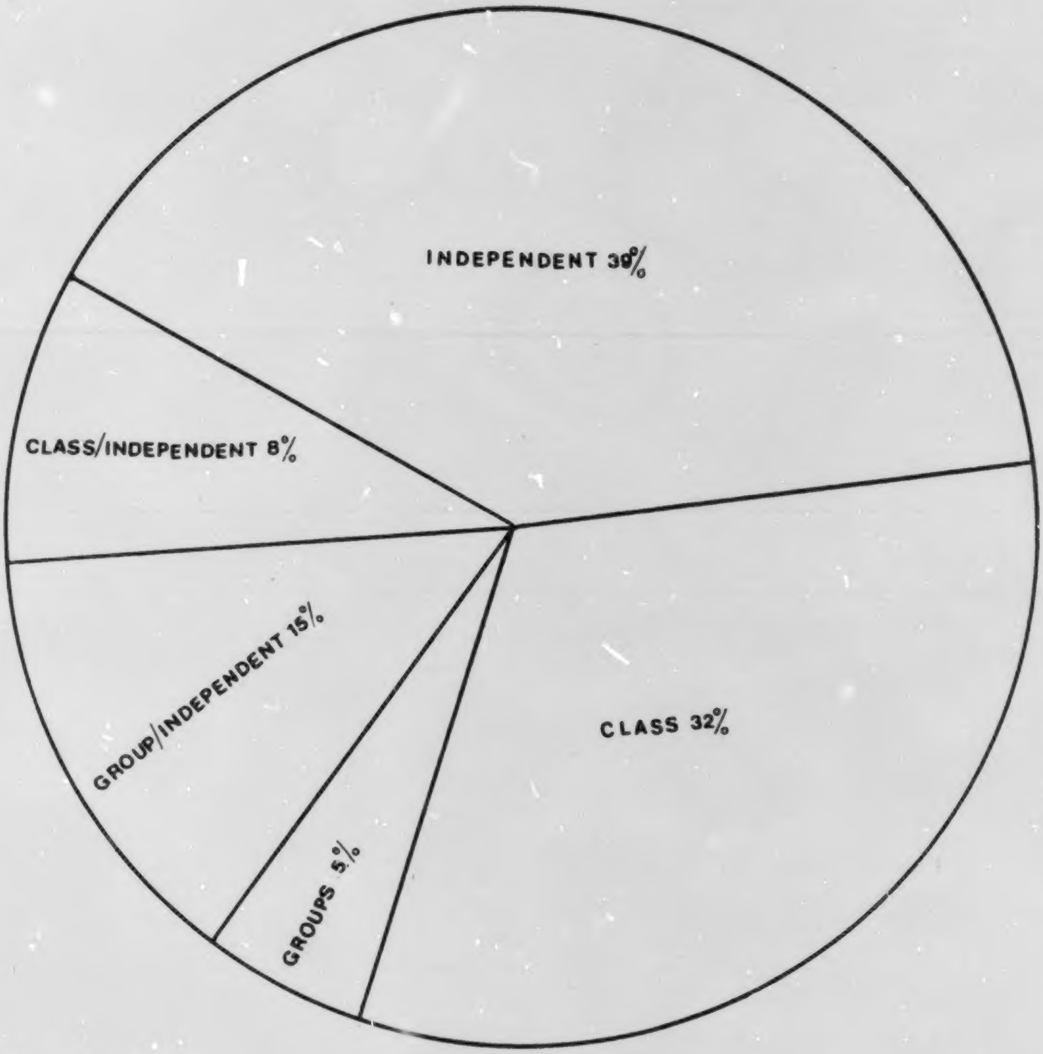
Class - the pupils were working as a class unit. Either the teacher or a pupil was talking to the class or the class was watching television or listening to the radio.

Group/Independent - the teacher was talking to a group while the rest of the class worked independently.

Class/Independent - this category referred to cycles which included both class and individual grouping structures.

Figure 8.3 graphically demonstrates how the pupils were grouped during the observation cycles. Pupils were observed working in pairs for less than one per cent of the cycles and this category is therefore excluded from the figure.

Figure 8.3: Grouping: *Proportion of cycles in which classes were organised in specific grouping arrangements.*



During thirty-nine per cent of the cycles the pupils were observed working independently on seatwork activities, and for a further fifteen per cent of cycles the teacher was observed with a group of pupils while the remainder worked independently. This latter pattern of pupil grouping was observed during twenty-four per cent of the cycles in rural schools but for only eight per cent of cycles in urban schools (Appendix C.8.3). In rural classes the group/independent category of pupil grouping occurred almost as frequently as the class grouping category which was recorded for twenty-five per cent of the cycles, whereas the urban pupils were working as a class for thirty-six per cent of the time.

In general, although pupils in rural classes were observed either working in groups, as a class or independently, pupils in urban classes were mainly observed either working as a class or independently.

TASK DIFFERENTIATION

The task dimension of the lesson format referred to whether the pupils were working on one or more than one task. The three categories used to describe task differentiation were:

> *One task* - this referred to cycles in which either the pupils were on the same exercises or they were all engaged in a class activity.
>
> *More than one task* - referred to seatwork activities in which either pupils were working at different exercises or they were engaged on creative work such as writing a story or they were involved in different types of task.
>
> *No task* - referred to cycles during which pupils were not engaged in specific work-related activities.

Table 8.1 details the percentage of cycles represented in each category in rural and urban classes. It should be noted that this aspect of the lesson format was not introduced until the second class visit and therefore refers to a total of 837 cycles.

There was a clear difference in emphasis in task differentiation between rural and urban classes. Pupils were engaged on the same task within classes during seventy per cent of the observation

Table 8.1: Task differentiation: *Percentages of cycles in rural and urban classes with specific categories of task content.*

Task	Rural	Urban	All
One task	36	70	57
More than one task	61	28	28
No task	3	2	2
N. cycles	330	507	837

cycles in urban classrooms but only thirty-six per cent of the cycles in rural classrooms. Clearly this difference in task differentiation reflects the composite nature of rural classes and the observed practices of dividing these classes so that a group of pupils were working with the teacher while the other pupils were working independently.

LESSON ORIENTATION

Lesson orientation referred to whether the class activities were selected by pupils, teachers or both. Table 8.2 details the proportion of cycles in both urban and rural classes in which the activities were selected by teachers, pupils or by teacher and pupils alike. This table also includes the proportion of cycles in which work-related tasks were not observed.

Table 8.2: Lesson orientation: *Percentages of cycles in rural and urban classes within each of four orientation categories.*

Orientation	Rural	Urban	All
Teacher selects task	82	82	82
Pupil selects task	6	4	5
Teacher/pupil selected	11	12	12
No task	3	2	2
N. cycles	330	507	837

Table 8.2 shows that teachers selected the majority of tasks in both rural and urban classes. There were few cycles during which pupils selected the tasks themselves, but during twelve per cent of the cycles the teachers provided a general topic and pupils were free to select their own approach. In art lessons, for example, pupils were frequently permitted to paint a subject of their choice.

LESSON FORMAT PATTERNS

Each aspect of the lesson format has so far been described independently. In this section the pattern of lesson activities is examined in relation to five major curriculum areas. These curriculum areas are defined with reference to eleven of the specific categories used to describe lesson content. Three per cent of the cycles are not included in this analysis, as these were categorised as either not having a work-related content (21 cycles) or concerned with French (2 cycles), library studies (5 cycles) and intelligence testing (5 cycles).

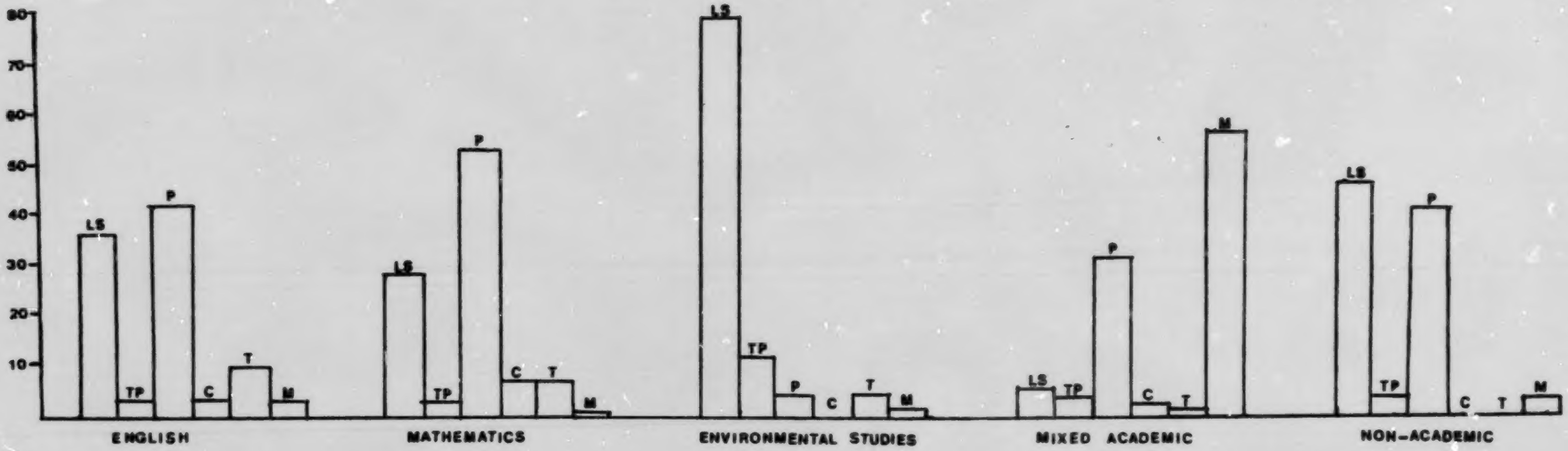
The five curriculum areas were *English,* including spelling and reading, *mathematics,* including tables, *Environmental studies,* including religious education, *Non-academic,* including music, art/ craft, PE, and games, and *Mixed Academic,* including two or more curriculum areas.

CURRICULUM AREA AND LESSON CONCERN

The percentage of cycles within each curriculum area associated with each of the six lesson modes are illustrated in Figure 8.4 and detailed for rural and urban classes in Appendix C.8.4.

Eighty per cent of English cycles were almost equally divided between practice and lesson specific topics. There was a similar division between these two lesson modes for the cycles involving music, art and physical education. However, environmental studies lessons were predominantly lesson specific and over half the mathematics cycles involved practice. Lessons with a mixed academic content

Figure 8.4: Curriculum area and lesson mode: *The relationships between curriculum areas and lesson specific (LS), thematic/project (TP), practice (P), corrections (C), testing (T) and mixed (M) lesson.*



also tended to be categorised as having a mixed mode presentation.

Both correction and testing were primarily associated with mathematics and English but were not associated with more than ten per cent of the cycles in any one curriculum area. Thematic or project work was unusual in subjects other than those associated with environmental studies.

In general, there was a similar pattern of association between each curriculum area and lesson concern in rural and urban classes. There was, however, a slightly greater emphasis on corrections, testing and project work for mathematics and English in urban schools.

CURRICULUM AREA AND PUPIL GROUPING

The patterns of association between the five curriculum areas and pupil grouping are detailed for rural and urban classes in Table 8.3. Over eighty per cent of English cycles in urban schools and some seventy per cent in rural schools were almost equally divided between pupils working independently and as a class unit. In rural classes during a further twenty-five per cent of English cycles pupils were either working in groups or independently as well as in groups.

In urban classes pupils were either working independently (38%) or as a class (37%) for three-quarters of the mathematics cycle. However, class work was less important for mathematics in rural classes (15%). Instead, pupils were either working independently (35%) or split into groups with one group working with the teacher and the other group(s) working independently (29%). A similar pattern of grouping was associated, in rural classes, with the occasions when pupils were working on mixed academic tasks(47%). However, in urban classes independent work was most important for mixed academic curriculum area (57%) and independent/class grouping was recorded for a further eighteen per cent of the cycles. This suggests that on these latter occasions the mixed academic category referred to subjects occurring consecutively rather than concurrently.

Table 8.3: *Percentage of cycles in five curriculum areas associated with specific lesson groupings in rural and urban classes.*

	Rural		*Urban*		*All*	
	N	%	N	%	N	%
ENGLISH	98		221		319	
Independent		32		43		40
Groups		10		2		5
Class		36		38		38
Independent/group		13		7		9
Independent/class		8		9		9
MATHEMATICS	62		117		179	
Independent		35		38		36
Groups		10		2		5
Pairs		0		4		3
Class		15		37		29
Independent/group		29		4		13
Independent/class		11		16		15
ENVIRONMENTAL STUDIES	42		97		131	
Independent		21		39		34
Groups		0		4		3
Pairs		7		0		2
Class		67		44		51
Independent/group		0		11		8
Independent/class		5		1		2
MIXED ACADEMIC	117		72		189	
Independent		46		58		51
Groups		3		0		2
Class		2		8		4
Independent/group		47		15		35
Independent/class		1		18		7
NON-ACADEMIC	66		78		146	
Independent		44		26		34
Groups		3		13		8
Class		33		45		39
Independent/group		11		9		10
Independent/class		5		8		6

In urban classes grouping during environmental studies lessons was similar to that observed for mathematics and English. Pupils were either working independently (39%) or as a class (40%) for the majority of cycles. In rural classes class work was predominant and was observed during two-thirds of the environmental studies cycles.

In general, teachers in urban and rural classes appeared to adopt different patterns of grouping. Pupils were working as a class more frequently in urban schools than in rural schools for all subjects except environmental studies, and with this one exception pupils in rural classes were most frequently working independently or in groups rather than as a class unit.

SUMMARY REVIEW

The contexts in which pupil and teacher activities were observed in primary school classrooms were categorised into five components of lesson format: lesson content, lesson mode, pupil grouping, task differentiation and task orientation. Although each of these aspects of classroom activity were categorised separately, certain components were interrelated. When pupils were working as a class unit for example, they were all involved in the same task and invariably this task was selected by the teacher. On the other hand, when pupils were working independently on seatwork activities all the pupils could be working on the same task or they could be working on different tasks. However, if these pupils were working on topics in different curriculum areas, they were invariably involved in more than one task.

Table 8.4 provides a summary of the pattern of events which were most frequently recorded during 238 hours of classroom observation in 28 classrooms. Those lesson formats which occurred with a frequency of at least two per cent in both rural and urban classrooms are distinguished from those which were particularly associated with either rural or urban classrooms.

Table 8.4: Lesson format patterns: *The most frequent patterns of lesson format in a sample of primary school classes.*

Curriculum Area	*Lesson Mode*	*Grouping*	*N. Tasks*	*Orientation*	*% cycles*
English	Lesson specific	Class	1	T	7
English	Lesson specific	Independent	1	T	4
English	Practice	Independent	1	T	8
English	Practice	Class	1	T	3
English	Practice	Independent/group*	<1	T	2
English	Testing	Class**	1	T	2
Mathematics	Lesson specific	Class	1	T	2
Mathematics	Practice	Independent	1	T	5
Mathematics	Practice	Class**	1	T	2
Env. studies	Lesson specific	Class	1	T	6
Env. studies	Lesson specific	Independent	1	T	3
Mixed Academic	Practice	Independent	<1	T	2
Mixed Academic	Practice	Independent/group*	<1	T	3
Mixed Academic	Mixed mode	Independent*	<1	T	6
Mixed Academic	Mixed mode	Independent/group*	<1	T	3
Non-academic	Lesson specific	Independent	<1	T	2
Non-academic	Lesson specific	Class	1	T	4
Non-academic	Practice	Independent*	<1	P	2
Non-academic	Practice	Class*	1	T	2

** Mainly observed in urban schools
* Mainly observed in rural schools

The nineteen lesson formats represent seventy per cent of all observations. They do not include infrequently observed lesson activities such as corrections or project work, infrequently observed lesson topics such as French or library studies or infrequent forms of pupil grouping such as pupils working in groups or co-operating in pairs.

Classes were observed working on academic topics for some eighty per cent of the 238 hours of class time recorded during classroom visits. However, the rural classes were most frequently observed working on tasks in more than one academic curriculum area, whereas lessons in urban classes tended to involve all pupils working in the same curriculum area.

The content of the observed lessons rarely involved a thematic approach to the curriculum. Pupils were most frequently practising acquired skills or engaged in work on a topic relating to the specific lesson. However, during ten per cent of the observed environmental studies lessons, pupils were engaged in project work.

Rural and urban classes were most frequently observed working independently on seatwork activities. However, whereas urban classes were observed working as a class unit for over a third of the observation period, rural classes were working as a class for only a quarter of the time. Instead of working with the class unit, the teachers in rural classrooms tended to work with a group of pupils while the other pupils in the class worked independently on assigned tasks. This pattern of grouping was frequently associated with work in more than one curriculum area so that teachers were engaged in teaching a topic in one curriculum area to a group of pupils while the other pupils worked independently on tasks in a second curriculum area. However, whether or not classes were working on one or more academic tasks, their activities tended to be selected by the teacher.

9: PATTERNS OF TEACHING

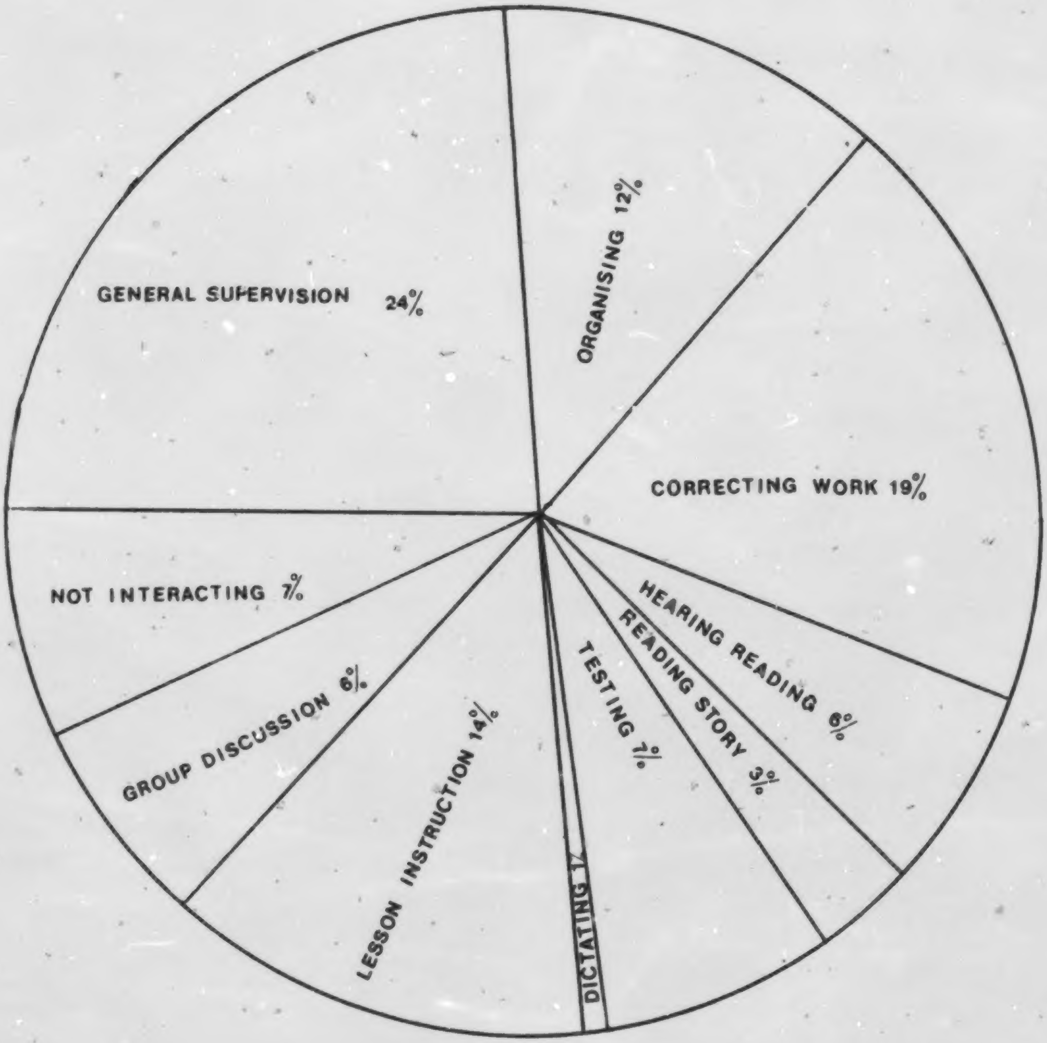
The previous chapter described the kind of lessons which were sampled during 48 hours of direct observation in 28 classrooms. As the primary focus of observation was on the pupil rather than the teacher, these lessons were not always taught by the class teacher. As has been shown in Chapter 7 pupils were observed with other teachers for subjects such as art/craft, music and French. There were also occasions when the classes were addressed by visiting speakers or taught by student teachers. On other occasions, although the class teacher was present in the room, a television or radio programme was the focus of pupil attention.

Observation cycles which referred to occasions when either the class teacher was absent, television or radio programmes were being broadcast, or pupils were engaged in activities within the non-academic curriculum area were excluded from the descriptive analysis of teaching activities.

This chapter therefore describes the nature of teaching activities when the class teachers were engaged with their classes. It also details the size of the pupil audience with whom the teachers were engaged, teachers' movement in the classrooms and the classroom resources they most frequently used. This information was recorded by the observers once during each observation cycle using the Context Schedule devised for the project (see Appendix A). It should be noted that the teaching behaviours described in this chapter do not refer to the teachers' specific interactions with pupils but to their general instructional role in the classroom during a fifteen minute period.

There were 732 observation cycles during which the class teachers were observed with their classes. These represented seventy-three per cent of all the observation cycles recorded in the classroom. The 732 observation cycles were divided among the four main curriculum areas as follows: forty-one per cent English, twenty-three per cent mathematics, twelve per cent environmental studies and twenty-three per cent mixed academic.

Figure 9.1: Teaching Activities: *proportion of cycles in which teachers were engaged in specific activities.*



TEACHING ACTIVITIES

The predominant teaching activities observed during each cycle were categorised under ten general headings. These were:

Organising: Used to describe occasions when the teacher was organising children or materials.

Lesson instruction: Used to describe the imparting of information to class or group.

Group discussion: Teacher was acting as the leader of a a discussion which involved a high level of participation from pupils.

Dictating: The teacher was dictating material for the pupils to copy.

Hearing reading: The teacher was hearing reading with an individual, group or class.

Reading story: The teacher was reading a story or poem to the class or group.

Testing: The teacher was administering a test in any subject.

Correcting work: The teacher was going over work with pupils.

General supervision: The teacher was involved in moving around the class helping with a number of activities.

Not interacting: The teacher was correcting at her desk or tidying up without interacting with pupils.

Figure 9.1 graphically illustrates the distribution of teaching activities among the 732 observation cycles. For a quarter of this time teachers were observed supervising pupils' independent work activities. For a further fifth of the time the teachers were correcting pupils' work either with individuals, groups or the class. Teachers therefore spent forty-three per cent of the observed time either supervising or correcting pupils' work. In contrast, they were engaged in direct instruction for only fourteen per cent of the time. However, the categories used to describe teaching activities were descriptive of the teachers' activities during a fifteen minute period and no record was made of the occasions when teachers were instructing individuals and at the same time supervising class activities or correcting pupils' work.

Although the general pattern of teaching activity illustrated in Figure 9.1 indicates that teachers were more frequently observed hearing pupils reading (6%) than they were themselves reading to the class (3%), the teachers in urban schools were observed reading stories to the class (4%) slightly more frequently than these teachers were observed hearing reading (3%). However, in rural classrooms teachers were observed hearing pupils read during ten per cent of the observation time and these teachers were reading to the class for only three per cent of the time. This difference in emphasis between rural and urban classes was attributed to the proportion of younger pupils in the composite rural classes. With the exception of 'hearing reading', the relative frequencies of teaching activities in urban and rural classrooms were similar.

The teaching activities associated with four curriculum areas were examined for teachers in rural and urban classes (Table 9.1). During English lessons in rural classrooms teachers were observed hearing reading for a fifth of the observed time whereas teachers in urban classrooms were only hearing pupils read during four per cent of the observed English lessons. The teachers in urban schools devoted more time during English lessons to general supervision and activities which did not involve interacting with pupils than did the teachers in rural schools.

Three teaching activities were predominant during mathematics lessons in rural and urban classrooms. These were general supervision (29%), correcting work (22%) and lesson instruction (27%). Similarly, two teaching activities were predominant for mixed academic lessons. These were general supervision (32%) and correcting work (28%). However, on these occasions teachers in rural classes were more frequently observed instructing pupils (13%) than were urban teachers (3%).

The relative times given to specific teaching activities in rural and urban classrooms differed most significantly for environmental studies lessons. In rural classrooms the most important activities in this curriculum area in terms of their percentage allocation of time were lesson instruction (38%) and leading discussions (19%). In urban classes these two teaching activities were only observed during a quarter of the environmental studies lesson time. Teachers in these classes were most frequently observed either supervising children's work (28%) or organising children and materials (24%). These differences in the observed teaching activities of rural and urban teachers during environmental studies lessons relate to the previously reported finding that pupil grouping differed during these lessons in the two types of school. Pupils in rural classes were most frequently observed working as a class on these occasions, whereas pupils in urban classes were working as a class or independently.

To summarise, this section has described teacher activities within different subject areas and within different types of school. Teachers were observed supervising pupil activities for a quarter of the observation time and they were correcting work for a fifth of the time. Both of these activities were found to be particularly associated with work in mathematics and mixed academic curriculum areas.

Instruction was observed less frequently than either correction or supervision. However, teachers were observed instructing pupils during twenty-seven per cent of the mathematics lessons in rural and urban classes and for thirty-two per cent of the environmental studies lessons in rural classes.

In general, there were few school differences between rural and urban classrooms in the teaching activities observed during mathematics and mixed academic lessons. However, teachers in rural classes were more frequently hearing pupils reading during English lessons and instructing pupils during environmental studies lessons, than were teachers in urban schools.

TEACHER-PUPIL CONTACT PATTERNS

In Chapter 8 differences in grouping between rural and urban classes were noted. The size of audience with which the teacher interacted was related to pupil grouping but was recorded separately in order to distinguish occasions when the teacher was not interacting with pupils or when the teacher was interacting with

Table 9.1: Teaching activities: *percentage of observed cycles (N) represented by ten teaching activities (%) in four curriculum areas in rural and urban classrooms.*

Activities	*Rural Classes*		*Urban Classes*		*All*	
	N	%	N	%	N	%
ENGLISH	91		205		296	
Instructing		9		10		10
Testing		10		9		10
General supervision		14		20		18
Reading story		7		7		7
Hearing reading		20		4		9
Group discussion		10		10		10
Dictating		0		3		2
Not interacting		6		11		9
Correcting work		13		15		14
Organising		12		10		11
MATHEMATICS	56		109		165	
Instructing		27		27		27
Testing		5		7		7
General supervision		34		27		29
Hearing reading		0		1		1
Group discussion		2		0		1
Not interacting		5		6		6
Correcting work		18		24		22
Organising		9		7		8
ENVIRONMENTAL STUDIES	21		67		88	
Instructing		38		12		18
Testing		5		6		6
General supervision		14		28		25
Reading story		0		2		1
Hearing reading		10		0		2
Group discussion		19		13		15
Not interacting		5		2		2
Correcting work		5		13		11
Organising		5		24		19
MIXED ACADEMIC	110		58		168	
Instructing		13		3		10
Testing		3		7		4
General supervision		35		26		32
Reading story		1		2		1
Hearing reading		8		7		8
Dictating		2		0		1
Not interacting		3		9		5
Correcting work		26		33		28
Organising		11		14		12

only one pupil. In practice, teachers rarely remained with a single pupil for the entire duration of an observation cycle (N = 9). This category was therefore combined with the cycles when teachers were interacting with several individuals.

Table 9.2 shows the variation in teacher-pupil involvement for each of nine specified teaching activities. The occasion when teachers were not interacting with pupils are excluded from this table.

In both rural and urban schools the class was the primary audience when the teachers were testing, dictating material, leading a discussion or reading a story. Individuals and groups were the audience when the teachers were supervising pupils' seatwork activities.

Teachers heard pupils reading in groups but also individually. There were only a few occasions when teachers heard pupils reading to the class.

The audience for teacher instruction tended to be the class in urban schools and the group in rural schools. Similarly, the teachers in rural schools were mainly observed correcting or organising pupils' work with individuals or groups, whereas the audience for these activities in urban schools tended to be individuals or the class. Further analysis revealed that in rural classrooms over eighty per cent of teacher instruction and organisation in mathematics was directed towards a group of pupils. In urban classrooms, on the other hand, teacher instruction in mathematics tended to be directed towards the class, whereas organisation involved individuals. During English lessons in rural and urban schools some ninety per cent of teacher instruction was with the class (Appendix C.9.1).

In general, teachers in both rural and urban classrooms spent a third of the observed class time interacting with individuals. However, whereas teachers in rural classrooms then divided their attention equally between addressing a group or the class, the teachers in urban classrooms tended to interact mainly with the class.

Table 9.2: *Percentage of observation cycles represented by six types of pupil contact for each of nine teaching activities.*

	Rural		*Urban*		*All*	
	N	%	N	%	N	%
INSTRUCTING	45		61		106	
Individuals		2		2		2
Groups		54		7		26
Class		38		77		60
Individual/groups		7		0		3
Individual/class		0		15		8
TESTING	16		35		51	
Groups		25		14		18
Class		69		74		73
Individual/class		6		11		10
GENERAL SUPERVISION	73		104		177	
Individuals		82		83		82
Groups		3		0		1
Class		0		4		2
Individual/groups		12		7		9
Individual/class		3		7		5
READING STORY	7		17		24	
Individual		14		12		13
Groups		86		82		83
Class		0		6		4
HEARING READING	29		14		43	
Individuals		21		36		26
Groups		76		57		70
Class		3		7		5
LEADING DISCUSSION	14		31		45	
Group		93		94		93
Class		7		3		4
Individual/class		0		3		2
DICTATING	2		8		10	
Groups		100		13		30
Class		0		88		70
CORRECTING WORK	51		87		138	
Independent		29		45		39
Group		35		3		15
Class		14		38		29
Independent/group		18		6		11
Independent/class		4		7		7
Nobody		0		1		1
ORGANISING	29		57		86	
Independent		21		34		29
Groups		24		4		10
Class		28		33		31
Independent/group		14		2		6
Independent/class		0		18		12
Nobody		14		11		12

TEACHER MOVEMENT

The teachers in rural and urban schools were most frequently observed seated at their desks (30%). They were observed moving around the classrooms for approximately a quarter of the observation time. At other times teachers in urban classrooms tended to remain at the front of the classroom or by the blackboard. In rural classrooms the teachers tended to move to the side of the room or to sit at one of the tables to work with a group of pupils.

Table 9.3 shows how teaching activities were related to specific patterns of teacher movement in rural and urban classrooms. A more detailed analysis of teachers' movement when instructing, correcting, organising and supervising work in each of four curriculum areas is shown in Appendix C.9.2. Teachers in urban classrooms tended to be seated at their desks when hearing reading and reading a story. They were most frequently moving about the class or at their desks when helping pupils individually, and at the blackboard or at the front of the classroom when instructing. These teachers were mainly at their own desks when correcting work during English, mixed academic and environmental studies lessons but at the blackboard when correcting work in mathematics. They were rarely at the side of the room and even more rarely at a table with pupils. When not interacting with pupils they were either writing an assignment on the blackboard or working at their own desks.

In rural classes teachers tended to be at pupils' tables or at their own desks when hearing reading, and they were frequently at their own desks when helping pupils individually so that pupils tended to come to them for supervision. They were mainly at the front or blackboard when instructing in English and mathematics. However, they were more frequently at a table with pupils when instructing in environmental studies. When correcting work in English, the teachers in rural classes tended to be either at the front of the room or moving about the room correcting each pupil's work at their desks. For mathematics corrections they were either at their own desks or at the blackboard. However, during mixed academic periods the blackboard was not used for corrections and the teacher

Table 9.3: Teacher's positions in the classroom during specific teaching activities: *Proportion of total observation cycles in each category with a frequency of at least one per cent.*

RURAL CLASSES	*circulating*	*own desk*	*blackboard*	*front*	*side*	*at tables*
Instructing	2	1	4	5	-	3
Testing	1	-	1	1	1	
General supervision	13	9	-	-	2	2
Reading story	-	2	-	-	-	
Hearing reading	-	3	-	-	3	4
Leading discussion	-	1	-	2	1	-
Not interacting	1	1	2	-	-	-
Correcting work	4	6	1	3	3	1
Organising	3	3	-	1	2	1
TOTAL	24	27	9	13	14	13
URBAN CLASSES						
Instructing	2	2	6	4	-	-
Testing	1	1	-	4	-	-
General supervision	15	6	-	2	-	-
Reading story	-	2	-	2	-	-
Hearing reading	-	2	-	-	-	-
Leading discussion	-	2	-	4	-	-
Dictating	-	-	-	1	-	-
Not interacting	-	4	2	1	-	-
Correcting work	3	9	4	2	-	-
Organising	4	4	-	2	1	-
TOTAL	26	32	14	23	4	1

either corrected pupils' work at their own desk or at the pupils' tables.

In general, teachers in both rural and urban schools were most frequently observed at their desks. However, whereas urban teachers were also frequently observed either moving about the room, at the blackboard and at the front of the room, teachers in rural classes were less frequently observed at the front of the room or at the blackboard. They were more frequently observed at the side of the room or at the pupils' tables.

MATERIALS USED BY TEACHERS

Table 9.5 shows the relative frequency with which teachers in rural and urban classes used each of ten types of material resources during English, mathematics, environmental studies and mixed academic lessons. It also shows the relative proportion of time during which the teachers were not observed using materials, although it is possible that pupils could have been working with materials on these occasions.

The blackboard was the most important teaching resource in urban schools, but it was used less frequently in rural schools. In urban schools the blackboard was used for fifty-five per cent of the time when teachers were instructing the pupils and for twenty-eight per cent of the time when they were correcting work. In rural classes it was used for thirty-five per cent of the instruction time and only thirteen per cent of the occasions when teachers were correcting work. The blackboard was particularly important for mathematics in urban schools. Teachers were observed using a blackboard during fifty per cent of mathematics lesson time, but only fifteen per cent of English lesson time. In rural schools the blackboard was important for environmental studies lessons (33%) and mathematics (29%).

In both rural and urban classes teachers used text books more frequently than the blackboard for English lessons. Text books were used more frequently in urban classes for environmental studies and mixed academic periods than in rural classes. Teachers in

Table 9.4: Materials used by teachers: *The percentage frequency with which teachers in rural and urban classes used specific materials.*

	Rural		*Urban*		*All*	
	N	%	N	%	N	%
ENGLISH	91		205		296	
Text book		14		18		17
Blackboard		8		15		13
Story/poetry book		15		10		11
Own notes		0		3		2
List of words		6		6		6
Miscellaneous		2		6		5
Readers		18		5		9
None		37		37		37
MATHEMATICS	56		109		165	
Text book		14		10		12
Blackboard		29		49		42
Own notes		0		2		1
Display chart		0		5		3
Mathematics equipment		13		7		9
None		45		27		32
ENVIRONMENTAL STUDIES	21		67		88	
Text book		5		15		13
Blackboard		33		9		15
Own notes		5		6		6
Display chart		5		0		1
Miscellaneous		19		13		15
Reader		10		2		3
Story/poetry book		0		3		2
None		24		51		44
MIXED ACADEMIC	110		58		168	
Text book		18		31		23
Blackboard		7		12		9
Own notes		1		0		1
Miscellaneous		13		7		11
Mathematics equipment		8		3		7
Reader		6		9		8
Story/poetry book		0		2		1
List of words		0		2		1
None		47		35		13

rural classes used text books mainly to correct pupils' work and thirty-nine per cent of all their correcting activities involved the use of text books. They also used text books for fifteen per cent of their instructing activities. In urban classes text books were used during thirty-one per cent of the occasions when teachers were correcting work and for eighteen per cent of the time when they were instructing (Appendix C.9.3).

Readers were used more frequently for English in rural classes than in urban classes. This finding is clearly related to the previously reported finding that teachers in rural classes devoted more time to hearing reading than teachers in urban classes. Teachers also used mathematics equipment more frequently in rural than in urban classes. The rural teachers used mathematics materials during a fifth of the occasions and urban teachers for ten per cent of the occasions when they were observed instructing in mathematics.

Teachers were not using any materials for a third of the observed time. For all curriculum areas in both urban and rural classes the teachers were most frequently observed not using their own materials when they were helping pupils individually.

SUMMARY REVIEW

The teaching activities described in this chapter were sampled during some one hundred and eighty hours of classroom life in a representative sample of twenty-eight classrooms. The teachers spent approximately a quarter of the observed time helping pupils individually either with text book exercises or other written work. They spent nearly a fifth of their time correcting written work with pupils. Both of these activities were directly related to the pupils' own work and together accounted for forty-three per cent of the teaching activities. Teachers were testing pupils on their acquired knowledge for a further seven per cent of the cycles.

Teaching activities associated with reading which either involved the teacher hearing reading or reading to the class were recorded during a further nine per cent of the observation time. The teachers were instructing pupils or leading a discussion for a fifth of the observed time. Teachers were, therefore, engaged in subject related teaching activities for over eighty per cent of the observed time. During the remaining twenty per cent of the observation cycles the teachers were either organising pupils and materials or engaged in activities which did not involve interaction with the pupils. These included marking and preparing lessons.

The teaching activities in urban classes were characteristically with the class as a unit or individual pupils. In rural classes teachers tended to work with individuals, groups or the class.

The teaching materials most frequently observed being used by teachers in these classrooms were the traditional teaching resources of the text book and the blackboard. Teachers were observed not using any materials for a third of the time observed.

10: PATTERNS OF PUPIL ACTIVITY

Pupils' classroom activities were recorded at the same time as the observers recorded the teacher activities described in Chapter 9. However, the procedure used to sample pupils' activities differed from that employed to sample teacher activities. Instead of recording the class activities using a series of global dimensions, each individual pupil's activity was recorded in sequence[1]. The record of class activity was derived from the percentage frequencies of each of the categories used to record pupil activity during an observation cycle. During one observation cycle, for example, when pupils were working independently on English tasks and the teacher was supervising their work, forty per cent of the pupils may have been observed using English text books, forty per cent observed reading story books, ten per cent waiting to see the teacher, five per cent talking to the teacher and five per cent arranging books and materials.

Pupil activities were categorised under seven general headings. These were:

> *Independent work activity:* the pupil was engaged in work-related activities without interacting with other pupils or the teacher. These activities involved the use of classroom resources.
>
> *Pupil-teacher interaction:* the pupil was engaged in conversation with the teacher.
>
> *Group-interaction:* the pupil was involved with a group of pupils and the teacher.
>
> *Pupil-pupil interaction:* the pupil was interacting with at least one other pupil.
>
> *Class activity:* the pupil was engaged in work-related activities as part of the class unit.
>
> *Non-instructional activity:* the pupil was engaged in activities which were not task related. These activities included preparation for work, movement around the room, waiting for the teacher, day-dreaming and routine activities.

---

[1] The pupil activities were recorded using the Pupil Activity Observation Record (PAOR), a category system devised for this project. The categories used in this system, its procedure and reliability are detailed in Appendix A. The modified categories used to describe pupil activities in this chapter were derived empirically as shown in Appendix B, which also includes a detailed description of the full range of PAOR modified categories.

Pupil absent: the pupil was temporarily outside the room during an observation cycle.

The mean percentage frequency of each of these categories during the 732 observation cycles in which the 28 classes were observed with their class teacher are included in Table 10.1. This table also details the mean percentage frequency of each category for rural and urban classes.

Table 10.1: *Mean percentage frequencies of pupil activities in rural and urban schools.*

Pupil activity	Rural classes	Urban classes	All
Independent work activity	40.9	36.9	37.3
Pupil-teacher interaction	1.4	1.4	1.4
Group interaction	6.8	1.2	3.4
Pupil-pupil interaction	11.0	11.0	11.0
Class activity	16.3	27.3	23.3
Non-instructional activity	16.0	16.5	17.8
Pupil temporarily absent	7.6	5.7	5.8
N. cycles	280	452	732

Table 10.1 shows that pupils were most frequently engaged in work-related activities. They were either working independently, in groups or as a class. The pupil observation data confirms the previously reported finding that pupils in rural classes tended to work in small groups more frequently than urban pupils. However, there were infrequent individual contacts between the pupils and their teachers in both rural and urban classrooms.

The mean percentage frequencies for non-instructional activities and pupil-pupil interaction are comparatively high. However, these means reflect both the number of cycles in which the activity occurred and the percentages of pupils engaged in these activities during the observation cycles. Non-instructional activities, unlike task-related activities, could occur during all observation cycles. They were not dependent on pupil grouping or curriculum area. Task-related activities, on the other hand, were constrained by the pattern of pupil grouping in the classroom. The percentage of cycles in which specific task-related activities could be observed were therefore limited. Appendix C.10.1 details the percentage of cycles during which each sub-category included under the six major headings were observed and their mean percentage frequencies. However, as pupil activities such as independent, group and class work activities were dependent on pupil grouping, the distribution of the sub-categories used to describe these activities were examined taking account of pupil grouping and curriculum area.

INDEPENDENT WORK ACTIVITIES

The mean percentage frequencies of 17 independent work activities were obtained for those observation cycles during which pupils were either working independently or independently and in groups at mathematics, English, environmental studies and mixed academic curriculum topics. Table 10.2 includes the mean percentage frequencies for independent work activities in rural and urban classroom. It also shows those differences between rural and urban classes which were statistically different at or above the five per cent level of significance. The percentages in the table do not add up to one hundred, as pupils were not only engaged in independent work during these observation cycles, but were also involved in either non-instructional activities or interacting with the teacher or other pupils.

It is clear from Table 10.2 that text books were important for English and mathematics seatwork but were less frequently used for environmental studies. However, in all four curriculum areas text books were more widely used than either work cards, reference books, apparatus or the blackboard. Some five per cent of pupils were observed copying from books during English seatwork periods. However, pupils were rarely engaged in copying activities during environmental studies, mathematics or mixed academic periods.

Table 10.2: Independent work activities: *Mean percentage frequencies of 17 independent work activities for independent work in four curriculum areas in rural and urban classrooms.*

	ENGLISH		MATHS		ENV. ST.		MIXED ACAD.	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Reading story books	1.5	3.4	3.4	0.9	0.1	0.0	1.2	1.6
Reading reference books	1.0	1.2	0.1	0.0	1.4	1.0	2.4	1.6
Using maths text books	0.4	0.3	15.4	18.0	0.1	0.0	5.8	8.6
Using English text books	12.4	16.0	0.0	0.0	1.0	0.0	7.4	5.4
Using work cards	5.6	2.0	1.0	0.7	2.5	0.5	2.6	3.2
Using dictionary	4.6	4.2	0.1	1.1	0.7	1.0	7.2	1.7**
Using blackboard	3.7	1.5	9.4	2.9*	1.9	4.5	3.8	1.7
Writing	13.6	10.3	8.4	6.6	13.1	20.5	5.9	8.3
Using 'other' text books	1.6	0.2	0.1	0.2	9.3	0.0	0.8	2.6
Using graded reader	1.2	6.3***	0.0	0.2	0.3	0.0	1.9	3.9
Copying from the blackboard	2.2	0.0	0.0	3.8	0.5	10.1**	0.4	0.0
Copying from books	4.0	5.7	0.3	0.5	1.9	0.0	0.7	1.8
Painting	0.0	0.2	0.0	0.0	0.7	1.0	0.0	0.8
Drawing	0.3	2.2***	0.5	0.8	10.9	3.0	1.8	3.4
Tracing/drawing diagrams	0.2	0.0	0.4	5.4**	2.1	3.8	0.1	1.6
Activity work	0.0	0.2*	0.3	0.8	2.5	0.0	3.1	0.6*
Mathematics activity	0.0	0.0	2.5	1.1	0.0	0.0	0.0	1.3*
Number of observation cycles	102	43	47	36	41	6	40	104

Significance of F: * for P < 0.05; ** for P < .01; *** for P < .001

Writing was important for all curriculum areas. However, the work which was coded as writing varied widely. In English it included writing compositions, writing stories and handwriting exercises. In mathematics it described the work of pupils writing out tables or doing problems which had previously been dictated by the teacher or making a fair copy of rough work. The category 'writing' therefore represented independent work which did not require resources other than a pen or pencil and an exercise book.

Writing was the most frequently observed independent activity for English in urban classrooms but in rural classrooms pupils tended to work from English text books or their graded reader. Rural classrooms included 8-and 9-year-old pupils as well as the 10-year-old Primary 6 pupils and it is therefore not surprising that a greater proportion of these pupils were engaged in drawing pictures to illustrate their work.

Independent work in mathematics most frequently involved work from text books. It rarely involved pupils working with mathematical apparatus. A higher proportion of pupils were observed drawing diagrams in rural classes than in urban classes, whereas pupils in urban classes were more frequently observed working on mathematical problems from the blackboard.

In Table 10.2 the mean frequencies for pupil independent work during environmental studies lessons in rural classes are based on records of only six observation cycles. This is because most independent work on environmental studies topics in rural classes was carried out while pupils in other groups were engaged on work in other curriculum areas. Nevertheless, it is interesting to note the importance of writing and drawing for independent work in environmental studies in urban schools and the relatively infrequent use of work cards. Although text books are less important for this curriculum area than for mathematics or English, they were used more frequently for seat-work activity on environmental studies topics than any other classroom resource.

Table 10.3: Class activities: *Mean percentage frequencies of 8 class work activities for class grouping in four curriculum areas in rural and urban classrooms.*

	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
	ENGLISH		MATHS		ENV. ST.		MIXED ACAD.	
Listening to teacher (routine)	1.3	0.7	2.0	1.1	1.1	1.7	2.7	0.0
Listening to teacher (lesson)	21.1	14.9	12.0	13.9	33.0	33.7	12.6	11.5
Listening to pupil	9.7	7.0	5.5	7.9	13.5	9.5	5.0	11.5
Listening/looking at book	4.6	14.5**	0.5	3.2*	2.0	1.3	4.9	0.0
Listening/looking at blackboard	2.5	5.7	20.0	7.8*	4.6	8.3	6.9	13.5
Listening/writing	5.9	5.7	2.3	0.9	1.6	0.0	4.5	0.0
Talking to class	1.8	2.1	1.2	1.6	1.0	0.9	0.6	5.0
Attention seeking	5.7	1.2**	8.5	5.9	4.7	7.5	6.8	0.0
Number of cycles	98	37	55	14	23	15	18	2

Table 10.4: Group activities: *Mean percentage frequencies of 3 group activities for group or independent/group organisation in four curriculum areas in rural and urban classrooms.*

Co-operative activity work	2.1	4.4	21.9	17.1	29.0	0.0	2.0	3.9
Pupil-teacher interaction	2.2	0.1	1.3	1.5	3.2	0.0	0.4	1.1
Working with teacher in group	6.1	27.4 **	9.1	8.3	1.3	0.0	16.5	15.3
Number of cycles	19	24	12	22	13	0	8	55

Significance of F: * for P < 0.05; ** for P < .01; *** for P < .001

CLASS WORK ACTIVITY

Table 10.3 shows the mean percentage frequencies of eight class work activities for those observation cycles in which the class was working as a class unit. It also shows those differences between rural and urban classes which were statistically significant at or above the five per cent level.

During English lessons the most important activity for urban classes was listening to the teacher talking about lesson topics. In rural classrooms the pupils spent an equal amount of time listening to the teacher talking about lesson topics and listening to the teacher and looking at their text books or readers. The teachers on these latter occasions were generally explaining pupils' seatwork activities, although one teacher in a rural school organised reading lessons for the class in which each pupil read a line or a paragraph of a novel following the teacher's reading of a passage. Pupils were 'listening and writing', an activity which was associated with spelling tests, almost as frequently during English lessons in rural classrooms as in urban classrooms.

Tests on mathematics tables occurred less frequently than spelling tests and 'listening and writing' was therefore less important for mathematics than for English. However, it should be noted that when teachers gave both spelling tests and tables to the class in the same period these observation cycles were classified as involving a mixed academic curriculum. Table 10.3 shows that 'listening and writing' was an important activity during these periods in urban classrooms.

The blackboard was particularly important for class work in mathematics in urban classrooms, whereas listening to the teacher talking about mathematics was the most important pupil activity for mathematics class work in rural classrooms.

In both urban and rural classrooms environmental studies lessons were dominated by teacher talk. In addition, pupils were listening to other pupils talking for ten per cent of the time. The use of books and the blackboard were less frequently observed during environmental studies than in mathematics or English lessons.

However, it should be noted that the current analysis does not include those observation cycles during which the classes were watching television, listening to the radio or watching films. As the majority of television programmes and a high proportion of radio programmes were concerned with environmental studies topics (see Chapter 7) these frequently provided the theme for class discussions or direct instruction by the teacher.

GROUP ACTIVITIES

Table 10.4 shows the mean percentage frequencies for pupils' co-operative activity work, pupil-teacher interaction and group work activities for observation cycles in which the classes were working in groups or independently and in groups. Group work with the teacher was important for English lessons in rural classrooms but less frequently observed during mathematics and mixed academic observation cycles. In both rural and urban classrooms co-operative activity work was mainly associated with mathematics. It was also important for environmental studies in urban classrooms. However, only a few environmental studies observation cycles in urban schools involved pupils working in groups and therefore the mean percentage frequencies for pupil activities are derived from only a small sample of classrooms.

In general, when pupils were working in groups or independently and in groups there was little contact between the teacher and individual pupils. Co-operative activity work in which two or more pupils were engaged in a task was particularly associated with mathematics in both rural and urban schools. On these occasions pupils were observed working on practical mathematics problems and most frequently groups of pupils were engaged on a variety of assignments.

Groups of pupils were working with the teacher during English and mixed academic lessons in rural classes and mixed academic lessons in urban classes. Although the pupil observation data does not indicate the variation in pupil activities during these occasions, the teacher activities described in Chapter 9 suggest that teachers were most frequently hearing reading with groups during English periods and instructing pupils or correcting their work during mixed academic periods.

USE OF CLASSROOM RESOURCES

The examination of pupil activities has indicated that three major types of resource were used in the sample of classrooms. These were text books, work cards and the blackboard. Which circumstances were associated with the use of these materials? Was their use related to their availability in the classroom? Was the blackboard more widely used by experienced rather than inexperienced teachers?

Further analyses were conducted in order to determine to what extent the classes' use of the blackboard, work cards and text books were predictable from school, classroom, teacher and class characteristics as well as the content of the lesson and the pupil grouping. The percentages of pupils observed using these resources during the 732 observation cycles were therefore defined as the criterion variables in a series of multiple regression analyses.

There was one pupil activity category which referred to pupils' use of work cards. However, there were three categories which specified the use of the blackboard by pupils (using the blackboard, copying from the blackboard, and listening and looking at the blackboard). The percentages of pupils engaged in these activities during each observation cycle were therefore combined to quantify the pupils' use of the blackboard. Similarly, there were four activity categories which specified the use of text books (using mathematics text books, using English text books, using 'other' text books and listening and looking at a book). These were combined to quantify pupils' use of text books.

Nine predictor measures were made available for a series of regression analyses. These were:

Teacher experience: Four-point scale based on number of years experience of each teacher (see Chapter 5).

Size of class: Reported size of classes at the beginning of the school year.

Reading level of class: Classes mean standardised score for the NFER Reading Test BD. One rural class did not complete this test and the mean reading score for rural classes was substituted.

Type of school: Whether urban or rural.

Classroom equipment: Six-point scale based on the availability of eight items of furniture including modern tables, storage cupboard, large wall blackboard etc. This scale which is described in Chapter 3 was reversed for the analysis.

Range of work cards: Three-point scale based on the range of mathematics and English work cards.

Range of text books: A three-point scale based on the range of English, mathematics, geography and history text books in the class.

Curriculum area: Three variables denoted whether the subject area was English, mathematics, environmental studies or mixed academic.

Pupil grouping: Four variables denoted whether the classes were working independently, in groups, as a class unit, independently and in groups, or as a class and independently.

Table 10.5 shows for pupils' use of work cards, blackboard and text book the independent contribution of each of the nine predictors and the percentage variation accounted for by all the predictors in combination. The nine predictors contributed least to explanation of the pupils' use of work cards, and contributed most to explanation of the use of text books. The range of text books in the classroom was a consistently important predictor of the three criteria. However, whereas the relatively frequent use of blackboard and text books were associated with a wide rather than a narrow range of text books, the frequent use of work cards was associated with a narrower range of text books. In contrast, a wide rather than a narrow range of work cards was associated with the frequent use of work cards and infrequent use of text books.

Further analysis showed that the total independent contribution of the three variables describing classroom resources including the range of text books, work cards and the level of classroom equipment, explained 7.9 per cent of the variation in the pupils' use of text books, 3.1 per cent of the variation in their use of work cards but only one per cent of the variation in the use of the blackboard.

Table 10.5: *Percent variation in pupils' use of three types of classroom resources.*

	df	Use of work cards	Use of blackboard	Use of text books
Teacher experience	1;717	0.47	0.09	0.80**
Size of class	1;717	0.29	0.02	3.89***
Reading level of class	1;717	0.31	0.54*	0.50*
Rural/urban schools	1;717	0.32	0.32	3.06***
Classroom equipment	1;717	0.38	0.00	0.14
Range of work cards	1;717	1.79***	0.01	3.21***
Range of text books	1;717	0.64*	1.03**	2.90***
Curriculum area	3;717	1.44**	7.03***	1.14*
Pupil grouping	4;717	2.02**	3.32***	5.64***
All predictors	14;717	9.64***	16.00***	16.83***

Significance of F: * for $P < 0.05$; ** for $P < 0.01$;
*** for $P < 0.001$

The characteristics of teachers, school and class had a negligible influence on predicting the pupils' use of the blackboard and work cards. However, text books were used more frequently by pupils in larger rather than smaller classes, by pupils in urban rather than rural schools and in classes with inexperienced rather than experienced teachers. It would seem, therefore, that teachers in large urban schools tended to be most dependent on text books as source material for pupils' independent work.

Curriculum area and pupil grouping were important for all criteria. Work cards were used most frequently during independent work with English (Table 10.2). The blackboard was used most frequently for class work in mathematics (Table 10.3) and text books were used frequently for independent work in English, mathematics and mixed academic curriculum areas (Table 10.2).

To summarise, regression analysis was employed to determine to what extent the pupils' use of work cards, text books and the blackboard was predictable from school, classroom, teacher and class characteristics as well as from the content of the lesson and the pupil grouping. The predictors included in the regression analyses explained one sixth of the variation in the observed frequency of the use of text books and the blackboard but only a tenth of the variation in the use of text books.

The most important predictor of the use of work cards was the availability of work cards in the classroom. However, it should be noted that teachers who wanted to provide a range of exercises tended to produce their own work cards. Text books, on the other hand, were frequently not provided by the teacher. Their availability in urban classrooms depended on the policy of the school towards the provision of classroom resources. However, the range of text books was an important predictor of their use in the classroom.

ORGANISATIONAL ASPECTS OF THE CLASSROOM

The previous sections of this chapter have detailed the distribution of pupil activities during those occasions when pupils were working independently, as a class unit or in groups. However, pupils' non-instructional activities, including collecting and arranging materials, moving around the classroom, doing routine tasks, waiting for the teacher and day-dreaming, could occur during any of the observation cycles. Similarly, pupil conversations with the teachers or their peers could occur in a wide variety of contexts. Regression analysis was employed in order to examine the concomitants of these pupil activities.

The contexts in which pupil activities were observed were categorised in relation to teacher's activity and lesson format. Four dimensions of these aspects of the classroom situation were considered potentially important concomitants of pupil activities. These were the curriculum area, pupil grouping, the teacher's activities and the teacher's position in the classroom.

The more stable features of the classroom environment which were considered as potentially important associates of pupil activities were the class size, the mean ability level of the class, the teacher's experience and whether or not the class was in a rural or urban setting. There were therefore eight sets of predictors available for a series of regression equations in which the criteria were the percentage frequencies of eight pupil activities during 732 observation cycles.

Three pupil interaction activities are the criteria for the regression solution summarised in Table 10.6. These activities are:

> *Pupils' social interaction (chatting):* the percentage frequencies of pupil-pupil interaction in which pupils were discussing non-work related topics or in which the conversations were not overheard.
>
> *Pupils' work-related interaction:* the percentage frequencies of pupil-pupil interaction in which pupils were discussing topics related to their work.
>
> *Teacher contact:* the percentage frequency of observed individual contacts between the pupils and the teacher.

Table 10.6 shows for each of these three pupil activities the percentage variation accounted for by all the predictors in combination. It also shows the variation accounted for by each predictor in turn in addition to that accounted for by the remaining variables.

It is clear from Table 10.6 that the concomitants of pupils' social interaction differ widely from the concomitants of their work-related interaction. Teacher experience, class size and the ability level of the class were important predictors of the frequency of pupil social interaction but they had a negligible influence on the frequency of pupils' work-related interactions.

A higher percentage of social interaction among pupils was associated with larger rather than smaller classes, inexperienced rather than experienced teachers and classes with a lower rather than a higher mean ability level. It would seem, therefore, that inexperienced teachers had either less control over the social interaction of pupils in their classroom or were more tolerant of pupils' social chatter than were older more experienced teachers.

Pupil grouping and teacher activity were also important predictors of the observed frequency of social interaction among pupils.

In order to examine the variation in the frequency of social interaction in different contexts, the observation cycles were grouped according to curriculum area (Appendix C.10.3) and teacher activity (Appendix C.10.5).

Table 10.6: *Percent variation in pupils' interaction behaviour during 732 observation cycles.*

Predictor sets	df	Pupil-pupil interaction Social chat	Work related	Teacher contact
Rural/urban schools	1;706	0.55*	0.09	0.39
Class size	1;706	1.48***	0.00	0.17
Ability level of class	1;706	1.01**	0.00	0.00
Teacher experience	1;706	3.82***	0.33	0.30
Curriculum area	3;706	0.39	2.45***	0.63
Pupil grouping	4;706	1.19*	0.96	1.53*
Teacher activity	9;706	2.44*	0.57	4.04***
Teacher position	5;706	0.82	1.72*	1.48*
All predictors	25;706	17.21***	10.60**	14.81***

Significance of F: * for $P < 0.05$; ** for $P < 0.01$; *** for $P < 0.001$

When differences in social interaction were examined for the six categories of pupil grouping, pupils were observed chatting most frequently when working independently and least often when the class was divided into groups. When the observation cycles were grouped according to the teacher's activity, pupils were found to interact socially most frequently when the teacher was reading a story to the class and when the teacher was supervising independent work. Pupils were less frequently observed interacting socially when the teacher was dictating to the class or group or when the teacher was hearing reading.

The eight sets of predictors explained 17.2 per cent of the variation in the frequency of social interaction. They explained only 10.6 per cent of the variation in the frequency of work-related interaction. Table 10.6 shows that curriculum area and teacher position were the only two predictors which accounted for more than one per cent of the variation in work-related interaction. Pupils were talking about work most frequently during environmental studies and mathematics lessons and least frequently during English lessons (Appendix C.10.2). The teacher was most frequently moving around the room when pupils were engaged in work-related interaction. They were rarely talking when the teacher was standing at the front of the room (Appendix C.10.4).

The predictors which were important for the frequency of individual pupil contacts with the teacher were confined to the sets of variables describing pupil grouping and teacher activity. The pupils were most frequently observed interacting with the teacher when the teacher was moving around or seated at her desk supervising independent work (Appendix C, Tables 10.3, 10.5). However, in general the mean frequency of pupil interaction with the teacher was slight, whether observation cycles were grouped according to teacher activities, pupil grouping or the teacher's position in the room.

NON-INSTRUCTIONAL ACTIVITIES

Table 10.7 summarises the regression solution for the five non-instructional pupil activity categories. These were:

> *Collecting and arranging:* the percentage of pupils arranging books or collecting materials.
>
> *Moving:* the percentage of pupils moving around the room.
>
> *Routine task:* the percentage of pupils engaged in routine tasks such as rubbing out mistakes or sharpening pencils.
>
> *Waiting:* the percentage of pupils waiting for the teacher either physically in a queue or at their desks.
>
> *Day-dreaming:* the percentage of pupils who were not involved in any discernable activities.

Table 10.7 shows for each of the five criteria the percentage variation explained by all the predictors in combination. It also shows the magnitude and significance of the unique contribution made by variables describing the setting in which pupil activities were

Table 10.7: *Percent variation in pupil non-instructional activities during 732 observation cycles.*

		PUPIL NON-INSTRUCTIONAL ACTIVITY				
Predictor sets	df	Collect/arrang	Moving	Routine tasks	Waiting	Day-dreaming
Rural/urban schools	1;706	0.21	0.00	0.00	0.04	0.16
Class size	;706	0.01	0.00	0.40	0.00	0.60
Ability of class	1;706	0.02	0.94**	0.00	0.27	1.52***
Teacher experience	1;706	0.13	0.14	0.13	0.00	0.06
Curriculum area	3;706	3.52***	0.21	0.28	0.88	1.22*
Pupil grouping	4;706	0.34	0.82	1.92**	1.07	1.37*
Teacher activity	9;706	3.27**	2.29*	0.67	5.18***	4.89***
Teacher position	5;706	0.42	2.50**	0.77	1.00	0.51
All predictor sets	25;706	10.49***	11.07***	8.90***	8.26***	15.35***

Significance of F: * for P < 0.05; ** for P < 0.01; *** for P < 0.001

observed and selected characteristics of the school, class and teacher.

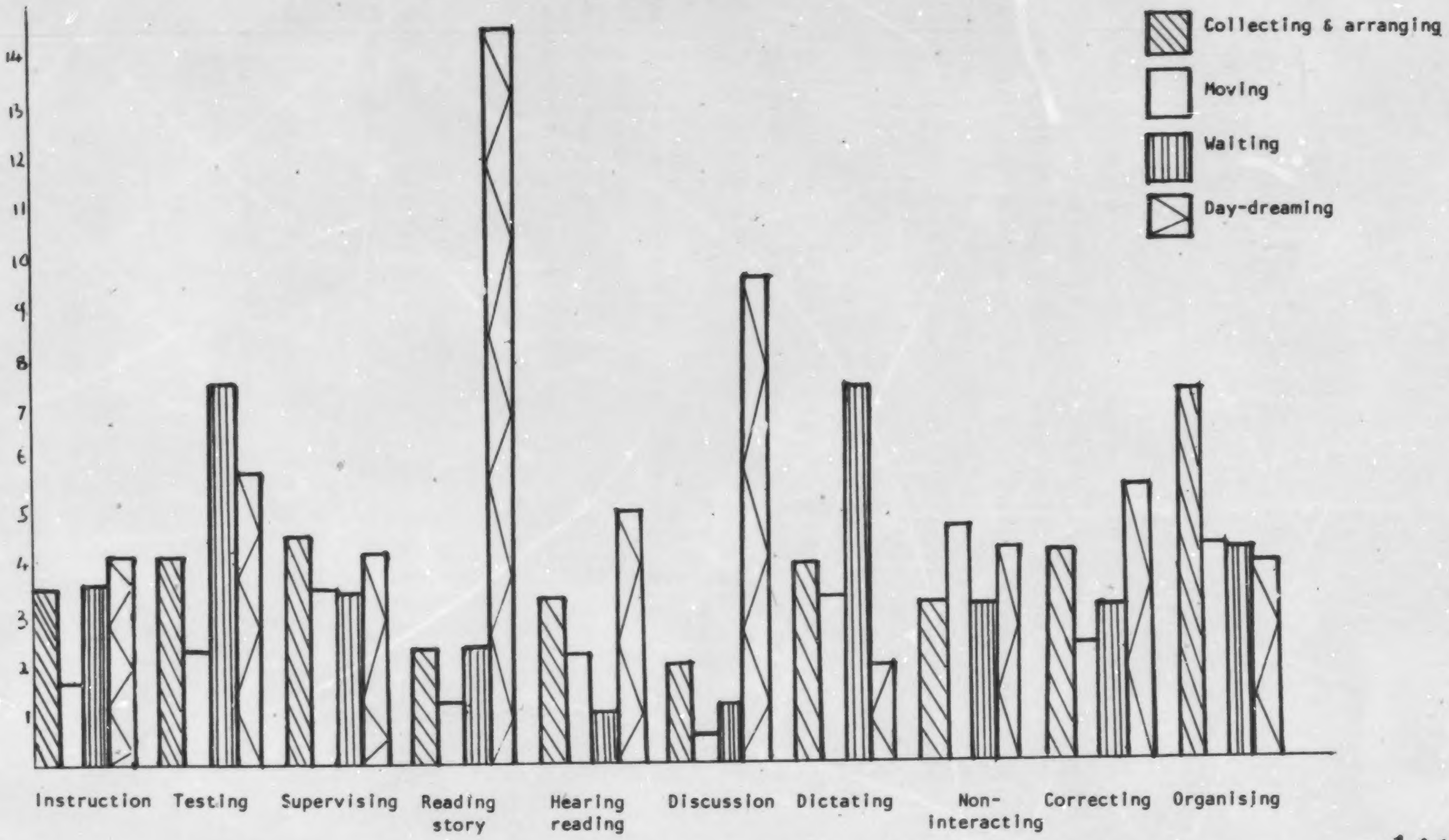
The predictor variables explained less than ten per cent of the variation in the frequency of routine tasks and waiting, but over fifteen per cent of the variation in the frequency of day-dreaming. Teacher activity emerged as a consistently important predictor for all criteria except the frequency of routine tasks. Figure 10.1 graphically illustrates the mean frequencies of collecting and arranging, moving, waiting and day-dreaming activities for observation cycles grouped according to the observed activities of the class teacher (Appendix C.10.5).

Pupils were collecting materials most frequently when the teacher was also engaged in organising pupils or materials, and pupils were most frequently moving around the classroom during occasions when the teacher was not interacting with pupils or when the teacher was organising pupils or materials.

Pupils were day-dreaming most frequently during those occasions when the teacher was reading to the class and also during class discussions. Pupils were waiting for the teacher most frequently when the teacher was testing the class or dictating. On these occasions pupils had completed the task and were waiting for the teacher to continue. It is notable that, on average, few pupils were observed waiting for the teacher when the teacher was correcting work or supervising independent work. Teacher activity was the only predictor which contributed to variation in the percentage of pupils observed waiting for the teacher.

Teacher position contributed to the explanation of variation in only one criterion, the frequency of pupil movement. Pupils were observed moving around the classroom most frequently when the teacher was at the desk and they moved least when the teacher was at the blackboard (Appendix C.10.4). The ability level of the class also contributed towards variation in the frequency of pupil movement. Pupils were observed to move more frequently in classes of lower rather than higher mean ability.

Figure 10.1: *the mean percentage of pupils engaged in collecting and arranging, moving, waiting and day-dreaming for 732 cycles grouped according to teachers' activity.*



The only set of variables which predicted more than one per cent of the variation in the frequency of routine tasks referred to pupil grouping. Routine activity was particularly associated with independent grouping (Appendix C.10.3). The curriculum area and teacher activity were important predictors of the frequency of collecting and arranging activities in the class. These activities were most frequently observed during observation cycles categorised as having a mixed academic curriculum (Appendix C.10.2). This was because the mixed academic category referred to observation cycles in which two or more curriculum areas occurred consecutively as well as those in which the class was engaged on topics in different curriculum areas. Collecting and arranging materials occurred most frequently when the teacher was organising pupils and it would seem these occasions were associated with a change of lesson content.

The ability of the class, the curriculum area, the pupil grouping and the teacher activity each contributed to variation in the frequency of day-dreaming activities. Day-dreaming occurred more frequently in classes with a low rather than a high mean ability level, in English curriculum areas rather than during other lessons, and it was particularly associated with occasions when the class was working as a single unit (Appendix C.10.3). Figure 10.1 shows that day-dreaming was most frequently observed when the teacher was reading to the class. Pupils were coded as day-dreaming if they were doodling or fiddling with their hair or otherwise appeared not to be concentrating. The observers were therefore coding the physical manifestations of non-involvement but they could not be certain that pupils were not at the same time listening to the teacher.

SUMMARY REVIEW

Class activities were recorded while pupils were engaged in their normal daily activities. This chapter has examined the pattern of these pupil activities in relationship to the contexts in which the pupils were observed. Work related activities were examined by taking account of pupil grouping and curriculum area. Non-instructional activities and the frequency of pupils' interactions, either with other pupils or the teachers, were examined in relation to teacher activities and the characteristics of the class, school and teacher as well as pupil grouping and curriculum area.

Classroom events, whether examined from the perspective of pupil activities, lesson organisation or teacher activities, were found to vary with differences in lesson content. These findings have previously been examined separately. They are brought together here in order to provide a summary of observed classroom organisation and instructional methods in English, mathematics, environmental studies and mixed academic lessons.

ENGLISH ACTIVITIES

For some eighty per cent of the time during English lessons pupils were working either independently (40%) or as a class unit (38%). The most frequently observed teaching activity in rural classes was hearing reading (20%). However, teachers in urban schools were hearing pupils read for only four per cent of the observed time. The teachers in urban classes devoted more time during English lessons to general supervision of pupils' seatwork activities and correcting pupils' work. Teachers in both rural and urban classes were instructing the class or a group of pupils for only ten per cent of the time and they were also testing pupils for ten per cent of the time.

Pupils' independent work for English mainly involved writing and text book exercises. Work cards and dictionaries were also important resources for independent English work in urban classes. In rural classes few pupils were observed using work cards, but dictionaries were important for seatwork activities as were graded readers. When the pupils were working as a class unit they were most frequently observed listening to the teacher.

An unexpected finding was that teachers in urban classes were rarely observed hearing pupils reading. The classes in rural schools not only included the ten-year-old Primary 6 pupils but also pupils from younger age-groups so that reading practice was more important in these classes.

MATHEMATICS ACTIVITIES

In urban classes pupils were either working independently (38%) or as a class (37%) during mathematics lessons. However, class work was less important in rural classrooms (15%). Instead pupils were either working independently (38%) or in groups with one group working with the teacher and the other group(s) working independently.

Three teaching activities were observed frequently during mathematics lessons. In both rural and urban schools teachers were instructing pupils in mathematics for a quarter of the observed time, supervising pupil seatwork activities for thirty per cent of the time and correcting work for approximately a fifth of the time. However, whereas in rural classes eighty per cent of teacher instruction in mathematics was directed towards a group of pupils, in urban classes teacher instruction tended to be directed towards the class.

The blackboard was particularly important for mathematics in urban schools. These teachers were using blackboards for over half the observed time. In rural classrooms teachers used their blackboards for thirty per cent of the time.

Although pupils' independent mathematics work mainly involved text book exercises, pupils in urban classes were almost as frequently observed working on mathematical problems from the blackboard. Independent work in mathematics rarely involved pupils working with mathematical apparatus, but one of the more frequently observed activities during independent mathematics work in rural classes involved pupils drawing diagrams or graphs.

In general, teachers were instructing pupils more frequently in mathematics than in English. However, pupils' independent work in mathematics was mainly based on text book exercises.

ENVIRONMENTAL STUDIES ACTIVITIES

In rural classes pupils were mainly working as a class for environmental studies lessons (67%) whereas in urban classes pupils were either working independently (39%) or as a class (40%). The subject matter presented by the teacher during environmental studies lessons was predominantly new material related to the specific lesson being observed. However, the pupils in urban classes were working on projects for some thirteen per cent of the observed environmental studies lessons.

The relative time given to specific teaching activities in rural and urban classes differed for environmental studies lessons. In rural classes teachers were most frequently observed either instructing the class (38%) or leading a discussion (19%). In urban classes, on the other hand, teachers were most frequently observed supervising children's work (28%) or organising children and materials (24%).

Pupils were most frequently writing and drawing pictures when working independently at environmental studies topics. However, there were few occasions when all pupils in rural classes were engaged in independent work in this area. When observed working as a class during environmental studies lessons pupils though mainly listening to the teacher were also listening to other pupils for some ten per cent of the time.

In general, environmental studies lessons were directed at the class in both rural and urban schools. There was little evidence of group work on these occasions.

MIXED ACADEMIC LESSONS

Mixed academic lessons referred to three types of situation. Groups of pupils were either working on topics within different curriculum areas, or individual pupils were working independently on exercises within different curriculum areas, or the observation period started with activities in one curriculum area and finished with activities in a second curriculum area. Pupil grouping during eighteen per cent of the mixed academic lessons involved individual and class work, which suggests that on these occasions the mixed academic category referred to subjects occurring consecutively rather than concurrently. Pupils were working independently for approximately half of the time during mixed academic lessons in urban and rural classes. A section of the classes worked independently while the teacher worked with a group of pupils for a further forty-seven per cent of the time in rural classes.

The predominant teaching activities for mixed academic periods in rural and urban classes were general supervision of seatwork (37%) and the correction of work (28%). Teachers tended to correct pupils' work on these occasions either at their own desk or at the pupils' tables.

Pupils' independent work during mixed academic lessons mainly involved working with text books or dictionaries. The activities during mixed academic lessons were, however, somewhat heterogeneous as specific curriculum content varied widely.

11: FINDINGS AND IMPLICATIONS

The major aim of this study was to objectively describe the provision of resources and pattern of activities observed in upper primary school classrooms. The findings of the investigation, as described in this report, provide a picture of the pattern of classroom life which emerged from the observation of 28 classrooms. It is therefore a composite pattern rather than a description of the activities in any particular classroom.

The need for a non-evaluative description of classroom practice arises because, as Dreeban (1973) argues, teaching is a very solitary and private kind of task and teachers have not been particularly concerned to document and disseminate their insights and experiences. He considered that the absence of a codified body of knowledge about teaching places the individual teacher at a disadvantage as 'it means that teachers are left very much alone to determine what they are doing right or wrong and to discover what they must do to solve their problems and correct their errors at work' (p.469). Furthermore, those who are closely concerned with education but who have irregular contact with the classroom, such as the teacher educator, the school architect, the curriculum developer and the educational administrator, are also at a disadvantage when information on classroom practice is not available to inform their decisions.

This report has presented a detailed account of specific aspects of classroom life based on information collected by a variety of procedures. The classroom activities of both teachers and pupils were observed and recorded systematically by non-participant observers. The teachers themselves were asked to report on their approaches to classroom organisation and curriculum content, and pupils' attitudes to a range of classroom activities were sampled using questionnaires. Interviews with the class teachers and observation of classroom events provided information on the school's timetable, movements of classes and teachers as well as less frequent events such as out-of-school visits and the activities of student teachers in the classroom. This approach was adopted in order to provide a composite picture of the activities of the typical primary school classroom rather than the exceptional one. Each aspect of the investigation has been reported separately. In this chapter some of the evidence from the various sources is reviewed in relation to the five main objectives of the investigation.

THE PRIMARY SCHOOL DAY

The length of the average school day in the sample of Northern Ireland primary schools was five hours fifty-one minutes. It was some fifty minutes shorter than the average school day in schools in the South of England (Hilsum and Cane, 1971). Nevertheless, an equivalent length of time was available for teaching in schools in both regions. In Northern Ireland less than a fifth of the day was allocated to break and lunch periods whereas in England a third to a quarter of the day was thus allocated.

The primary school day was typically divided into two morning teaching sessions and one afternoon session. Pupils were usually working in the morning in their own classrooms with their class teacher. These sessions could, however, include activities which were dependent on the availability of school facilities such as the gymnasium, or neighbourhood amenities such as the swimming pool or library, or periods devoted to television and radio programmes. However, pupils were rarely observed working at projects, art or drama during the morning.

Afternoon sessions frequently involved classes working with teachers other than their class teacher. Typically, classes were divided, once or twice a week, into single-sex groups. In one school, there was a variety of 'club' activities for pupils to select, but in the majority of schools girls were working at needlework while boys were working at craftwork, art, or in one school, science.

These schools tended to provide different craft subjects for boys and girls although the *Northern Ireland Primary Education Teachers' Guide* (1974) had indicated that 'there can be no justification on educational grounds for this practice' (p.81). Seven years previously the *Plowden Report* (1967) had commented that 'latterly a much greater variety of crafts ... have come into the primary school and the distinction between what is done by boys and girls has greatly disappeared' (p.249). It would appear that art and craft were taught in these Northern Ireland primary schools according to traditional practice rather than recent precept.

Music was the only curriculum subject, apart from art/craft/needlework, which was consistently observed being taught by teachers other than the class teachers. It was also noted that the radio programmes most frequently used by teachers were concerned with the teaching of music. It would seem that although many class teachers preferred not to teach music themselves, they ensured that music was included as part of the class curriculum.

A further feature of the school day was the number of interruptions to which the average class was subjected. In urban schools these interruptions tended to be school-related, whereas in rural schools the callers tended to be outside visitors and caused fewer interruptions. However, one feature common to both school types was the scarcity of parental visits. While it is possible that parents could have contacted teachers at other times, it was notable that only one parent was observed visiting the classrooms during the school day.

RURAL AND URBAN SCHOOLS

Throughout the Report comparisons have been drawn between practices in urban and rural schools. This procedure has highlighted the differences between the two groups of schools, but may equally have masked similarities.

Boyd (1972) and Wilson (1970) reported the results of surveys which indicated that, at the end of the 'sixties, small Northern

Ireland primary schools had limited access to expensive items of equipment. In the current investigation all schools had a television, radio and piano and over half the rural schools and seventy per cent of the larger urban schools had a tape recorder, record player, duplicator and slide projector.

Boyd (1972) also found that provision of equipment varied in different areas in Northern Ireland. The area in which the current survey was carried out is one of five major administrative areas for the province. While the area may be exceptional, the findings suggest that discrepancies in provision between rural and urban areas have been greatly reduced since earlier surveys. Furthermore, the differences in classroom provision between rural and urban schools were slight.

Teachers in rural schools were generally older and more experienced than teachers in urban schools. They were also frequently the principals of their schools. They consequently had greater autonomy in the choice of materials and curriculum than urban teachers, who were constrained by agreed school policies on these issues.

The major differences between rural and urban schools related to class composition. In rural schools classes were composites which included pupils from at least two year-groups. In urban schools classes tended to include pupils of mixed ability but of similar age groups. The importance of class composition in determining the organisation of rural classes gains added emphasis when the findings of the current investigation are compared with the results of an Australian study carried out by Hogan (1973) in multigrade (composite) and single grade classrooms. Both in the current investigation and in Hogan's study pupils in composite classes were more frequently working in groups and more frequently engaged in seatwork activities than pupils in single grade classrooms.

In the present study it was further noted that rural classes were more frequently working on topics in different curriculum areas than were urban classes. However, when the patterns of teaching activities were examined for specific curriculum areas without reference to class grouping, there were few differences in the nature or frequencies of observed teaching activities. Similarly, although pupils in urban classes were more frequently working as a class unit than pupils in rural classes, the frequencies of interaction between individual pupils and the teacher were similar in the two types of school.

Previous research had indicated that rural pupils tended to achieve lower scores on tests of attainment and ability than urban pupils. Although this finding was confirmed in the current study, it was also noted that these differences were attributable more to variations in pupils' socio-economic background rather than qualitative differences between urban and rural schools.

CLASSROOM RESOURCES

Teachers had selected a wide variety of text books for use in the Primary 6 classes, but there was no apparent consensus among the sample of teachers on the most appropriate text books for this age-group. The ratings of text book provision were therefore based on the variety of books available in any one class. The majority of classes were supplied with a wide range of mathematics and English text books, but only single sets of geography and history text books were in use.

Observation of classroom activity revealed that text books were widely used by pupils for independent work in mathematics and English. Work cards, which were less frequently used by pupils, were mainly associated with English seatwork. The range of text books and work cards in the classroom was found to be associated with their use. Thus pupils in classrooms with a wide range of text books used text books more frequently than pupils in classrooms with a narrow range of text books. Pupils also used text books more frequently in classrooms with a narrow rather than a wide range of work cards.

The use of text books, but not of work cards, varied with certain characteristics of the class, teacher and school. Text books were used more frequently by larger rather than smaller classes, by urban rather than rural pupils, and in classes with inexperienced rather than experienced teachers.

The investigation has highlighted the importance of text books in the upper primary school. Nash (1973), in a study of classroom practice in five Scottish primary schools also noted that text books were important for the teaching of mathematics and English. The Report of the Bullock Committee (1976) commented that text books are widely used for the teaching of English. It also stated that 'comprehension work is standard practice in schools, and for most pupils it occupies a place in English lessons for the greater part of their school life. Much of this work is from text book exercises designed for the purpose' (p.120). However, neither the Bullock Committee, nor the Plowden Committee, endorsed such practices. They considered that exercises in English text books were inadequate for developing comprehension as 'they provide too restricting a context and do not take account of the fact that reading should satisfy some purpose on the part of the reader' (p.120).

The disparity between precept and practice is wide, and clearly if teachers are continuing to use text books in this way it is advisable that the fact should be taken into account by theorists and teacher educators.

Although teachers' use of text books was not in accord with the practices advocated by the exhortative literature, a different picture emerged in relation to the provision and use of library books. The school library service in the South-Eastern area provided each class with at least 80 titles, both fiction and non-fiction, which nearly all schools used to form class libraries. These books, which were changed twice a year, were invariably new or in very good condition. Additional reference books were obtained from the library service's Permanent Loan Scheme, and schools situated near a branch library were also able to arrange for regular visits by their Primary 6 classes for tuition in the use of the library.

Pupils were encouraged by their class teachers to borrow books from the classroom library to read at home, during library periods or when they had finished their work, and some teachers were also observed providing practice and tuition in the use of books for reference.

PATTERNS OF TEACHING

Teachers' reports concerning their general approach to classroom organisation and curriculum content indicated that the majority of teachers had introduced activities such as project work and practical arithmetic to the upper primary school curriculum. However, they had also retained more traditional practices such as regular testing of lists of spellings, work with mathematics problems and class-prepared compositions.

It was noted that classroom practice, as revealed in teachers' reports, could not be represented in terms of a single traditional-progressive continuum. Instead classroom practice in the current investigation was characterised by eight independent dimensions of classroom behaviour which distinguished teachers' approach to curriculum, evaluation, group work and pupil seating.

Systematic observation of teaching in the classroom further revealed that not only was it inappropriate to categorise teachers according to global categories, but it was equally inappropriate to assume that teaching methods were consistent across subject areas.

Teaching activities during mathematics lessons were divided between direct instruction of the class or group, supervision of pupils' seatwork activities and correction of the pupils' work. This pattern of teaching appeared to reflect the structured content of mathematics and the tendency for teachers to provide mathematics exercises rather than practical mathematics activities.

The content of English lessons included drama, comprehension and dictionary exercises, reading and class discussion. The pattern of teaching observed during these lessons was therefore more varied than that observed during mathematics lessons. Teachers were less frequently engaged in direct instruction, supervising and correcting during English lessons than during mathematics. Moreover, they were, observed organising pupils and materials, leading discussion or testing pupils as frequently as they were engaged in direct instruction.

Environmental studies lessons mainly involved activities such as the supervision of pupils' project work, discussions which were frequently based on television or radio broadcasts, and direct instruction on topics such as the use of the atlas. Moreover, those teachers who based mathematics and English lessons on structured exercises from text books or the blackboard quite often adopted a different approach to the teaching of environmental studies topics. It is also notable, in this context, that pupils were more frequently observed talking to each other about work activities during environmental studies lessons than during lessons in other curriculum areas.

Such variations in observed teaching activities between curriculum areas were equally apparent in a study conducted by Wilson *et al* (1976) in Northern Ireland primary schools. However, research on teaching has generally ignored the content of the lessons being taught in its concern to define generally effective teaching strategies.

In general, teachers spent only a fifth of the time observed instructing pupils or leading discussions. They were organising or supervising pupils' individual work for a third of the time and correcting pupils' work for a further fifth of the time. Observation studies carried out by Hilsum and Cane (1971) and Boydell (1975) in England, Duthie (1970) in Scotland, and several studies carried out in America and reviewed by Dunkin and Biddle (1974) have reported that teachers spend a large proportion of time on organising activities which are not immediately directed towards the instruction of pupils. The current investigation clearly adds support to these findings, and suggests that management skills may be as important for the teacher in the classroom as are the skills of guiding and instructing which most text books in teacher education assume to be the predominant requirement. As Morrison (1977) notes with reference to the work of Duthie and Hilsum and Cane: 'these findings raise important questions about the range of skills required by teachers and the ways in which both the instructional and the maintenance components of performance may be radically affected by the prevailing mode of teaching.

PUPIL ATTITUDES

When pupils were asked to express their attitudes towards a wide range of class activities, the majority reported that they enjoyed activities such as games, listening to the teacher reading and watching television in school. Project work was also popular. Although pupils tended to be less enthusiastic about writing exercises, spelling, geography and history, few pupils indicated that they disliked these activities. However, some forty per cent of the pupils disliked mathematics and associated activities such as mathematics tables and mathematics problems from the blackboard. Further analyses suggested that there was a tendency for pupils who disliked mathematics to be of lower ability, from manual rather than non-manual backgrounds and in classes in which the teacher frequently taught problem 'sums' but rarely required pupils to learn mathematics tables.

While these results provided some indication of the factors associated with variations in pupil attitudes, a more detailed investigation of the teaching of mathematics in primary schools may be required in order to determine specific reasons for the lack of positive attitudes towards this subject.

PUPILS' CLASSROOM ACTIVITIES

Pupils were working at mathematics or English topics for over half the time during which classes were observed, and they were engaged on academic work for eighty per cent of the total observed time. During these occasions pupils were most frequently observed working independently at their desks on either text book and blackboard exercises, or engaged in work involving writing such as composition. In rural classes a group of pupils would often work with the teacher while the rest of the class was working independently on seatwork activities. This pattern of grouping was less popular in urban classes where pupils were more frequently observed working as a class unit.

In both rural and urban classes pupils were only occasionally observed interacting individually with the teacher. They were far more frequently observed talking to other pupils. A distinction was made between pupil conversations which were concerned with work and those which involved social interaction among pupils. Further analysis indicated that social conversations occurred in different contexts than work-related conversations. The frequency of work-related conversations among pupils was most directly related to the curriculum content of the lesson. However, the frequency of social conversation among pupils varied according to the activity of the teacher and the grouping of the class. It also varied in relation to more stable features of the classroom including the experience of the teacher, the size of class and its mean ability.

Pupils in lower ability classes were more frequently observed chatting to each other, day-dreaming and moving around the classroom than pupils in higher ability classes. These findings suggested that pupils in such classes were more easily distracted from their work, regardless of the experience of their teachers. However, the frequency with which pupils engaged in non-instructional activities such as waiting and collecting and arranging materials was generally found to be determined by aspects of the immediate environment including pupil grouping and teacher activities rather than by more stable differences between classrooms such as class size or ability level.

CONCLUSION

The realities of teaching as revealed in this enquiry often differed from the accepted view of the nature of education as promoted in official reports. The teachers sampled had generally retained traditional practices such as the regular teaching of spelling and multiplication tables. They had also retained tight control of classroom events so that pupils had relatively little opportunity to choose or organise their own activities. A subject-centred rather than integrated approach to the curriculum appeared to be predominant. Clearly in Northern Ireland, as in England (Bennett, 1976), there has not been a significant movement towards the patterns of teaching endorsed by the Plowden Report (1967).

Nevertheless, teachers in Northern Ireland, as in England, had incorporated some innovative practices with more orthodox approaches to their task. This was particularly apparent in the case of environmental studies, where teachers had adopted more informal modes of teaching than in either mathematics or English. Project work was popular in this curriculum area, and teachers tended to encourage pupils to work together on topics rather than independently.

In view of the disparity between practice and precept observed in many aspects of the study, it could reasonably be argued that decision-making, whether in relation to the design of new school buildings, the development of a new curriculum or the provision of new equipment should be informed as much by an understanding of the work of actual practitioners as by expert opinion if innovations are to successfully influence practice.

The findings of the enquiry highlighted several aspects of teaching which have not previously been of particular concern to theorists, but which nonetheless are important features of classroom life. Text books, for example, were observed to be widely used in teaching mathematics and English although such practice is not endorsed in official reports, and, as Rosenshine and Furst (1973) noted, they have seldom featured in research on teaching. What influence have text books on the curriculum of the primary school? How do teachers match the level of the text book to the ability of the child? Are teachers' methods of prescribing and correcting text book exercises related to pupil achievement? Answers to questions such as these should be sought if teachers are to be guided in the discriminating use of text books in the classroom.

It is often assumed that it is possible to define effective teaching skills without reference to the interactive nature of teaching and the context in which teaching occurs. The findings of this enquiry suggest that teaching practices vary quite considerably according to the curriculum area and the age composition of the classes being taught. In these circumstances it would seem appropriate that those concerned with the assessment of both pre-service and in-service teaching should consider whether teaching strategies which are effective in one context are equally effective in other situations.

The enquiry further revealed that teachers were as much managers as instructors in the learning situation. What are the implications of classroom management strategies such as the organisation and grouping of pupils, the structuring and sequencing of materials and the arrangement of seating for the adaptation and achievement of pupils? Are student teachers being prepared for their managerial as well as their instructional role? Questions such as these arise when teaching is viewed, as in the present study, in the context of the day-to-day activities of the teacher in the classroom.

Recently, there has been an increasing awareness of the necessity for systematic monitoring and assessment of innovations. However, there has not been an equivalent concern with the assessment of those practices which such innovations are designed to supplement or replace. The findings of this investigation would suggest, in common with Jackson (1968) in his observation of *Life in Classrooms*, that educational innovators should 'seek an understanding of the teaching process as it is commonly performed before making an effort to change it'.

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APPENDIX A: CLASSROOM OBSERVATION SCHEDULES

PUPIL ACTIVITY OBSERVATION RECORD

The Pupil Activity Observation Record (PAOR) is one of two classroom observation schedules devised for the study. It was developed to record pupil activities and the materials they used in the classroom. Its approach was based on the scanning procedure employed by Yeager and Lindvall (1968). For the PAOR each pupil in the class was coded once during a ten minute observation period.

Yeager and Lindvall developed the IPI Observation Form to obtain a relatively objective description of pupils' observable behaviour in the classroom. They listed pupil activities under five major categories. These were independent work, teacher-pupil activity, non-instructional activity, pupil-pupil activity and group activity. These categories distinguished between work-related and non-instructional activities and independent and interactive behaviour. They also indicated the size and type of group with whom the pupil was engaged.

The IPI category system provided the framework for the description of pupil activities in the PAOR. However, the specific activity categories used in the IPI Student Observation Form were designed to monitor the extent to which the objectives of an individualized programme of instruction were realized. These categories were not found to be appropriate for Northern Ireland classrooms and were modified following initial classroom observation trials.

PUPIL ACTIVITY CATEGORIES

Forty-two specific pupil activity categories were arranged into the following eight major categories: Independent work activity, Teacher-pupil activities, Pupil-pupil activities, Group-teacher activities, Class activity, Non-instructional independent activity and Pupil temporarily absent from room.

The observer using the PAOR located each pupil in sequence and recorded his activity using one of the 42 specific activity categories. These specific categories are listed below in Figure A.1 together with the abbreviations used to describe the pupil activity in the PAOR Record Form (Figure A.3).

Figure A.1: PAOR - Pupil Activity Observation Record: *Activity Categories.*

Independent Activities: child NOT interacting

1.	Read	reading - reading to himself - a definite activity.
2.	Writ	writing - doing mathematical work as well as writing stories, definite activity - essays, etc.
3.	Lo/Wr	looking at board or book and writing - doing examples.
4.	Copy	copying work from blackboard or book - no creative element.
5.	P/D	painting/drawing - creative.
6.	T/R	tracing/drawing lines - non-creative.
7.	Act	activity work - sewing/measuring/playing games/ playing instrument/modelling, etc.

Non-Instructional Independent Activity

8.	Co/ar	collecting material - e.g. at library corner getting book/paper - arranging work - giving out materials - putting away work, etc.
9.	Mov	changing location/going out of classroom, etc.
10.	Rou	routine task - rubbing out/sharpening pencil.
11.	Wai	waiting for teacher - to correct work - for help - ask question.
41.	O.S	observing observer.
13.	Think	definite activity - child counting on fingers, etc.
14.	DD	day dreaming.
15.	I.Misc	independent miscellaneous

Pupil-Pupil Activities: pupils interacting, less than half the class, teacher not involved

16.	CAW	co-operative activity work - measuring - playing, etc.
17.	TP	talking and listening to other pupil(s).
18.	LP	lcoking at pupils or their work.
19.	Mis	misbehaving physically - hitting each other, etc.

Pupil-Teacher Activities: a pupil with teacher

20.	Talk	talking to teacher.
21.	Att	listening/watching teacher.
22.	Rea	reading aloud to teacher.
23.	P.Misc	miscellaneous activity pupil with teacher.

Group-Teacher Activities: more than one pupil but less than half the class with teacher

24.	RA	reading aloud to group.
25.	List.T	listening to the teacher.
26.	List.P	listening to pupil.
27.	TG/T	talking to teacher, group.
28.	Grou.A	group activity work.
29.	G.Misc	miscellaneous activity - queueing as a group.

Class Activities: more than half the class - with or without teacher

30.	LT	listening to teacher.
31.	LPC	listening to pupil.
32.	Lo/lis	looking and listening - definite activity - looking at T.V., listening to radio, etc.
33.	Lis/Wr	listening and writing, correcting.
34.	TC	pupil talking to teacher and class - answering questions.
35.	CRA	reading aloud to class.
36.	Sing	singing/poetry.
37.	Chant	chanting examples in maths, English, etc.
38.	Acti	acting/drama
39.	C.Act	class activity in P.E., music and movement.
40.	C.Misc	class miscellaneous to include queueing.
12.	Att.S	attention seeking behaviour - holding up hand.
42.	P.Abs	pupil absent.

PAOR MATERIAL CATEGORIES

In order to sample not only pupil activities but also the materials they were using in the classroom a second dimension was introduced for the PAOR. It included 36 categories which referred to the range of material resources available for use in the classroom. One category (DNA) was completed if the pupil was absent from the room and one of four categories was coded if the pupil was in the classroom but not observed using materials. If the pupil was engaged in a conversation or listening to the teacher the content of the conversation was recorded as either lesson topic, routine or discipline. If the conversation was not overheard or if the pupil was engaged on an independent activity which did not involve the use of materials the no-material category was coded.

The observer using the PAOR recorded an activity and a material category for each pupil observed. These material categories are shown in Figure A.2 together with the abbreviation used to describe them for the PAOR Record Form (Figure A.3).

Figure A.2: PAOR - Pupil Activity Observation Record: *Material Categories*

Material		
1.	None	no material
2.	SB	story book
3.	Ref	reference book
4.	Kit	reading kit
5.	MT	maths text book
6.	ET	English text book
7.	OT	other text books
8.	R	reader
9.	Sp	spelling
10.	Dict	dictionary
11.	Atl	atlas
12.	W Ca	published work card
13.	W CT	teacher's work card
14.	Com	comic
15.	Mag	magazine
16.	Pam	TV and radio pamphlets
17.	OPM	other printed material
18.	Art	art material
19.	MM	modelling material
20.	Math	mathematical equipment
21.	Radi	radio

Material		
22.	TV	television
23.	RP	record player/tape recorder
24.	Fi	slide projector/film
25.	Mus	musical instruments
26.	Gam	educational games/P.E. equipment
27.	NSO	nature study objects
28.	DC	display chart
29.	Glob	globes
30.	BL	blackboard
31.	Rou	routine materials
32.	PP	pencil and paper
33.	Exbk	exercise book/jotter
34.	Prog	progress tests
35.	Misc	miscellaneous
36.	Oth	other
37.	DNA	does not apply (pupil absent)

Topic of Conversation		
38.	Rou	routine
39.	Disc	discipline
40.	Less	lesson

PAOR RECORD FORM

In order to ensure that pupils were observed in sequence and no pupil was omitted or coded twice during the ten minute observation period each pupil in each class was given a code number These codes were ordered alphabetically so that the first pupil in the class list was coded as A, the second B, etc. If there were more than 26 pupils in the class the twenty-seventh pupil was given the code 'one' and the remaining pupils were coded in numerical sequence. These codes were written on cardboard badges which were provided for all pupils. It was therefore possible to locate pupils quickly and easily in the classroom.

Figure A.3, which illustrates a completed PAOR record sheet, demonstrates the procedure used to record both pupil activity and material dimensions. When pupil A was located, for example, he was engaged in writing using his exercise book. The observer therefore recorded an A next to activity category 2 'writing' and also material category 33 'exercise book'. Pupil B was collecting and arranging his books when located. The observer therefore recorded B next to activity category 8 'collecting and arranging' and material category 35 'miscellaneous'. This procedure continued until each pupil's activity was recorded once on the record sheet.

INTER-OBSERVER AGREEMENT

In order to ensure that the two observers engaged in fieldwork were in agreement in their categorisation of pupil behaviour a series of agreement trials were carried out throughout the field-work stage of the enquiry. During nine per cent of the visits to schools the two observers visited a class together and both simultaneously recorded the class activity for six observation cycles. These visits were in different classes and included 89 observation cycles from 15 class visits.

The agreement between observers was obtained by comparing the

Figure A.3: *Sample PAOR Record Sheet.*

Obs. No....4.... Time..11:05...

	1.Read	C,T
	2.Writ	A, E, I, J, L, R, V, 1, 2, 3, 5
	3.Lo/Wr	
	4.Copy	
	5.P/D	P, W, Z
	6.T/R	
	7.Act	
	8.Co/Ar	B
	9.Mov	V, 4
	10.Rou	F, O, Q
	11.Wal	
	12.Att.S	
	13.Think	M
	14.DD	S, Y
	15.I.Misc	
PP	16.CAW	
	7.TP	D, G, K, N
	18.LP	
	19.Mis	
PT	20.Talk	
	21.Att	
	22.Rea	
	23.P.Misc	
GT	24.RA	
	25.List.T	
	26.List.P	
	27.TG/T	
	28.Grou.A	
	29.Lo/LIG	
C	30.LT	
	31.LPC	
	32.Lo/Lis	
	33.Lis/Wr	
	34.TC	
	35.CRA	
	36.Sing	
	37.Chant	
	38.Acti	
	39.C.Act	
	40.C.Misc	
	41.0.0	
	42.P.Abs.	H
	43.L.OthA	

1.None	G, K, S, V, Y, 4
2.SB	
3.Ref	
4.Kit	
5.MT	
6.ET	
7.OT	
8.R	
9.Sp	
10.Dict	
11.Atl	
12.W Ca	
13.W CT	
14.Com	
15.Mag	
16.Pam	
17.OPM	
18.Art	
19.MM	
20.Math	
21.Radi	
22.TV	
23.RP	
24.Proj	
25.Mus	
26.Gam	
27.NSO	
28.DC	
29.Glob	
30.BL	
31.Rou	F, O, Q
32.PP	
33.Exbk	A, C, E, I, J, L, P, R, T, U, W, Z, 1, 2, 3, 5
34.Prog	
35.Misc	B
36.Oth	
37.DNA	H
38.Rou	D, N
39.Disc	
40.Less	M

categories recorded by the observers for activity and the materials dimension of the PAOR. The number of agreements obtained were converted to percentages for each observation cycle. This procedure enabled comparisons to be made between observations in classes of varying sizes.

It was found that mean observer agreement for activity categories was 93.83% and the range was 61-100%. The mean observer agreement for the material categories was 90.95% and the range was 60-100%. In general therefore the two observers maintained a consistent approach to recording pupil activity and material categories.

CONTEXT SCHEDULE

Herbert (1974) and Alderson and Hird (1974) employed context schedules in order to categorise the settings in which pupil and teacher activities were recorded in natural classroom situations. They recorded the location of the pupil or class, the curriculum content of the lesson, and the characteristic pattern of pupil grouping during a fixed time interval. Alderson and Hird completed their context schedule after each fifteen minute period of observation. This procedure was adopted for the current investigation. However, the categories employed in the published context schedules were not appropriate for this study and a series of category dimensions were developed to record the contexts in which pupil activities were recorded.

The final form of the context schedule as shown in Figure A.4 included 12 dimensions. Five dimensions referred to the lesson content, pupil grouping and nature of the task. Four dimensions referred to the teacher's activity.

The observer using the context schedule categorised the observed classroom events during a fifteen minute observation cycle by recording an appropriate category for each of the nine context dimensions. The Context Record Sheet was printed on the reverse side of the PAOR Record Sheet so that the record of each observation cycle was available on a single form. The observer completed the observation cycle by recording the number of interruptions which occurred from outside the classroom during the fifteen minute period.

On completion of each visit to the classroom the observer recorded the location of the class during the visit, and the teacher or teachers who were observed with the class and the time of the visit. The categories used to describe these aspects of the classroom situation are included in Figure A.4.

Figure A.4: Context Record: *Categories*

LESSON FORMAT

1. *Structure of Lesson*
    1. Practice
    2. Lesson specific
    3. Thematic
    4. Testing
    5. Project work
    6. Corrections
    7. No lesson

2. *Lesson Concern*
    1. General English
    2. Spelling
    3. Reading
    4. General mathematics
    5. Tables
    6. R.E.
    7. Environmental studies
    8. Music
    9. Arts/crafts
    10. French
    11. Irish
    12. P.E./games
    13. Needlework
    14. Academic
    15. No lesson
    16. Library studies
    17. Intelligence testing

TEACHING ACTIVITY

1. *Dominant Teacher Activity*
    1. Organizing
    2. Helping pupils
    3. Reading story
    4. Hearing reading
    5. Discussion
    6. Dictating material
    7. Writing assignments
    8. Correcting work
    9. Talking to adult
    10. Watching/listening programme
    11. Instructing
    12. Testing
    13. Out
    14. Listening to adult/child

2. *T. Position in Room*
    1. Circulating
    2. Own desk
    3. Blackboard
    4. At table
    5. At tables
    6. Front
    7. Side
    8. Back
    9. Out

Figure A.4 cont'd.

LESSON FORMAT

3. *Pupil Grouping*
    1. Pupils working independently
    2. Pupils working in groups
    3. Pupils working in pairs
    4. Pupils working as class

4. *Task*
    1. All pupils on same task
    2. Pupils working on diff.tasks
    3. No task

5. *Orientation*
    1. Teacher selected task
    2. Pupil selected task
    3. No task
    4. Teacher and pupil selected

OBSERVATION SETTING

1. *Adult Observed*
    1. Teacher
    2. Teacher and student
    3. Student alone
    4. Other teacher
    5. Other speaker
    6. Principal
    7. Two or more teachers
    8. No adults

2. *Position of Class*
    1. Classroom
    2. Hall/canteen
    3. Classroom and hall
    4. One other classroom
    5. Two other classrooms
    6. Three or more classrooms
    7. Playground
    8. Library
    9. Class/corridor/playground

3. *Time*
    1. Before break
    2. After break
    3. Afternoon

TEACHING ACTIVITY

3. *Pupil-Teacher Involvement*
    1. Individual pupil
    2. Individual pupil(s)
    3. Small group (3-8)
    4. Small groups
    5. Large group (8+)
    6. Whole class
    7. Nobody
    8. Teacher absent

4. *Material Used by Teacher*
    1. Text book
    2. Blackboard
    3. Story/book/poetry
    4. Own notes
    5. Display chart
    6. List of words
    7. Radio
    8. T.V.
    9. Record player
    10. Tape recorder
    11. Maths equipment
    12. Pupils' model, toy, etc.
    13. Reference book
    14. Other printed material
    15. Art material
    16. Modelling material
    17. Nature study objects
    18. Routine
    19. Practice material
    20. Piano
    21. Work cards
    22. Reader
    23. None
    24. General materials

INTER-OBSERVER AGREEMENT

A series of agreement trials were carried out for the context schedule at the same time as the observers were carrying out such agreement trials for the PAOR. During nine per cent of the visits to schools the two observers visited a class together and both simultaneously recorded the class activity and the context in which pupils were observed for six observation cycles. A total of 89 observation cycles were recorded during 15 class visits.

The agreement between observers was obtained by comparing the categories recorded by the observers for four teaching activity dimensions and five lesson format dimensions. Two of the latter dimensions - task differentiation and lesson orientation - were not included in the context schedule during the initial visit to schools. The percentage agreements for these dimensions refer to 48 observation cycles.

Table A.1 which illustrates the percentage agreement between the observers for each of nine dimensions clearly shows that there were few disagreements in the coding of the categories describing lesson format and teaching activity.

Table A.1: *Inter-observer agreement for each of nine Context Schedule categories.*

Dimension	Percentage agreement
LESSON FORMAT	
Structure of lesson	98
Lesson concern	100
Pupil grouping	100
Task differentiation	100
Lesson orientation	100
TEACHING ACTIVITY	
Dominant teaching activity	100
Teacher's position in room	98
Teacher-pupil involvement	99
Materials used by teacher	100

APPENDIX B: PUPIL ACTIVITIES

The Pupil Activity Observation Record (PAOR) included 42 categories which referred to pupil activity and 40 categories which referred to the material the pupil was using or the topic of pupil conversations. The observer using the PAOR recorded one activity and one material or topic category for each pupil in the class during a 15 minute observation cycle. This procedure was repeated until six observation cycles were completed. Each class was observed in this manner on six occasions. There were therefore 36 PAOR activity and 36 PAOR material categories recorded for each of the 856 pupils in the sample of 28 classes.

In order to describe the pattern of class activities rather than the activity of the individual pupils, it was necessary to reduce the 30,816 pupil activity and material/topic categories into a manageable form.

The first stage in reducing the data to manageable proportions was to combine the two PAOR dimensions into a single variable. The number of possible combinations of a dimension with 42 categories and a dimension with 40 categories is 1,680 (42 x 40). However, the activity and material dimensions were interrelated and certain combinations of variables could not occur as for example, reading with mathematics equipment. Nevertheless, it was necessary to determine which of the possible 1,680 combinations actually occurred in the observed classrooms and which of them occurred to any substantial frequency.

In order to determine the relative and concurrent frequencies of the PAOR categories, two samples of 100 pupils each were randomly selected from the total population of pupils included in the investigation. The relative and concurrent frequencies of PAOR activity and material categories recorded for Sample A pupils on the first, third and fifth observation cycles of each of the six class visits were compared with related relative and concurrent frequencies of PAOR categories recorded for Sample B pupils on the second, fourth and sixth observation cycle of each of the class visits. There were

Table B.1: *Mean frequency of PAOR activities in two samples.*

	Sample A		Sample B	
	Mean	S.D	Mean	S.D
INDEPENDENT WORK ACTIVITY				
Reading	5.56	2.61	5.06	3.05
Writing	5.22	3.19	4.61	2.52
Looking and writing	11.22	5.20	10.56	5.45
Copying	2.06	1.99	2.06	1.81
Painting	3.00	2.77	1.50	2.24
Tracing	1.44	1.57	0.78	0.63
Activity work	2.39	3.68	2.17	2.52
Thinking	2.89	2.13	2.78	1.69
PUPIL-PUPIL ACTIVITY				
Co-operative activity work	1.78	1.72	1.50	2.01
Talking to another pupil	6.22	2.55	5.72	3.21
Listening to another pupil	1.67	1.56	1.06	0.85
Misbehaving	0.22	0.42	0.11	0.31
PUPIL-TEACHER ACTIVITY				
Talking to the teacher	0.67	0.88	0.44	0.68
Attending to the teacher	0.56	0.68	0.28	0.56
Reading to the teacher	0.11	0.31	0.11	0.31
GROUP ACTIVITY (Teacher present)				
Reading aloud	0.11	0.31	0.28	0.56
Listening to teacher	1.11	0.81	0.94	0.91
Listening to pupil	0.22	0.42	0.17	0.37
Talking to group	0.06	0.23	0.28	0.45
Group activity	0.56	0.83	0.28	0.56
Looking and listening	0.44	0.68	0.33	0.58
CLASS ACTIVITY				
Listening to teacher	7.44	2.97	7.56	3.45
Listening to pupil	3.28	2.90	2.83	1.95
Looking and listening	6.44	3.08	8.50	5.15
Listening and writing	1.50	2.01	1.83	1.95
Talking to class	0.44	0.76	0.61	0.59
Reading aloud to class	0.11	0.31	-	-
Singing	0.67	0.88	1.22	1.75
Chanting	0.56	1.01	0.17	0.37
Acting	0.50	0.90	0.61	1.42
Class activity	1.50	1.50	2.06	2.22
Listening to other adult	1.44	2.34	2.06	4.02

	Sample A		Sample B	
	Mean	S.D	Mean	S.D
NON-INSTRUCTIONAL ACTIVITY				
Collecting and arranging	3.00	1.97	3.78	2.12
Moving (F=10.53**)	2.94	1.61	1.44	1.01
Routine	1.61	1.21	1.44	1.07
Waiting	3.50	2.19	4.50	2.06
Attention seeking	1.78	1.47	2.33	1.37
Independent miscellaneous	0.11	0.31	0.17	0.37
Class miscellaneous	1.22	1.75	0.78	1.08
Day-dreaming	3.56	1.77	3.78	2.04
Observing observer	0.33	0.75	0.83	0.76
Pupil temporarily absent	4.56	5.52	3.72	3.74
Number of pupils =	100		100	

Significance of F: ** for P < .001

Table B.2: *Mean frequency of PAOR material categories in two samples.*

	Sample A		Sample B	
	Mean	S.D	Mean	S.D
MATERIALS				
No materials	19.33	8.06	19.33	9.17
Routine topic	2.33	2.13	1.56	1.42
Discipline topic	0.22	0.42	0.22	0.42
Lesson topic	17.78	9.14	18.56	10.24
Radio	1.17	1.74	1.56	2.39
Television	2.22	3.63	1.83	2.57
Record player	0.28	0.93	0.39	1.11
Projector	0.06	0.23	0.17	0.50
Art materials	1.78	3.14	0.83	1.64
Modelling materials	1.11	2.21	1.11	1.73
Needlework materials	0.89	3.21	0.33	1.15
Blackboard	4.56	3.18	6.06	4.38
Display chart	0.11	0.31	0.50	0.83
Paper and pencil	2.94	2.59	2.11	2.45
Exercise books	7.28	2.94	6.67	3.43
Routine material	1.56	1.12	1.28	0.99

	Sample A		Sample B	
	Mean	S.D	Mean	S.D
Mathematics text books	3.67	2.52	3.89	2.23
English text book	4.06	2.41	3.50	2.22
Other text book	1.28	2.05	1.28	1.66
Spelling list	0.28	0.56	0.67	0.67
Story book	1.67	1.53	2.28	2.21
Reference book	1.94	2.32	1.17	1.92
Reading laboratory	0.44	0.90	0.22	0.53
Reader	1.94	1.61	1.17	1.12
Dictionary	1.22	1.23	2.11	2.21
Atlas	0.39	0.76	0.28	0.56
Work card (teacher)	0.39	0.68	0.72	0.87
Work card (published)	0.94	1.47	0.56	0.90
Comic	0.11	0.31	0.06	0.23
Magazine	0.11	0.46	0.06	0.23
Pamphlet	0.50	0.96	0.56	1.17
Test material	0.39	0.76	0.28	0.56
Other printed material	0.33	0.58	0.22	0.42
Musical instruments	0.22	0.53	0.11	0.46
Mathematics equipment	1.50	1.74	1.17	1.01
Games equipment	1.61	1.53	1.72	1.76
Nature study objects	-	-	0.06	0.23
Miscellaneous materials	2.11	1.63	4.44	8.74
Number of pupils =	100		100	

therefore a total of 3,600 activity and 3,600 material categories available for analysis.

Although the analysis was carried out primarily to determine the concurrent frequencies of the PAOR categories, the relative frequencies of each of the activity and material categories were also of considerable interest. This Appendix describes the relative frequency of specific pupil activities among the sample of pupils and the relative frequency of usage of material resources. It does not detail the concurrent frequencies of activity and material categories as the majority of association between dimensions were found to occur with a frequency of less than one per cent. Infrequent activities were therefore combined to form more stable descriptions of pupil behaviour. The Appendix concludes with a description of the method of combining variables and a list of the derived PAOR categories.

PUPIL ACTIVITIES

A series of one-way analyses of variance were carried out in order to assess whether the frequency of PAOR categories were comparable for the two independent pupil samples. Only one statistically significant difference was found between the samples. The obtained frequencies were therefore considered to be relatively stable and the two subsamples were combined for further analysis. Tables B.1 and B.2 detail the 80 PAOR categories and their mean frequency of occurrence for pupils in both samples A and B.

Only one activity category had a mean frequency of over ten per cent. This was the independent work activity 'looking and writing', which was used to describe pupils working at exercises or problems from a text book, work card or the blackboard. Four activities had a mean frequency of at least five per cent. These included reading, talking to another pupil, listening to the teacher in class and 'looking and listening'. The latter category described pupils' behaviour when they were listening to the teacher or other pupil and looking at the blackboard or text book. It also described pupils' behaviour when looking at television or listening to the radio.

Sixteen of the pupil activities had a mean frequency of less than one per cent. These included three categories describing those occasions when the teacher was interacting with the observed pupil and also five of the six categories describing the activities of the pupil in a group context. Another category which was rarely used was 'pupil misbehaving', which was reserved for occasions when the pupils were engaged in physical dispute.

The forty activity categories were grouped into seven major sections. Figure B.1 illustrates the mean frequency for these major groupings of the categories for the sample of 200 pupils. The Figure also includes the mean number of pupils who were absent on the visits to schools and the mean number who were temporarily absent from the room during an observation cycle.

The most frequently observed pupil activities were those categorised as independent work activities and those which involved the pupil interacting with the teacher and with other pupils as a member of the class unit. Pupils were rarely observed either interacting with the teacher in a group or individually. However, an average of one in eleven pupils were observed interacting with other pupils.

Some fourteen per cent of the observed pupil behaviour involved non-instructional activities including 'waiting for the teacher', 'collecting or arranging materials' and routine procedures such as sharpening a pencil. A further four per cent of the pupils were also engaged in non-instructional behaviour which was categorised as day-dreaming. These pupils were neither involved in interaction with others nor were they engaged in observable purposive behaviour.

INTERACTIVE ACTIVITIES

The PAOR category system also took account of the size and composition of the group with whom a pupil was interacting. For example, if a pupil was reading aloud to a small group of pupils this activity was distinguished from reading aloud to the class. Table B.3 details the frequency of reading aloud, listening and talking with four different audiences.

Figure B.1: Pupil activities: *Mean frequency of pupil activities.*

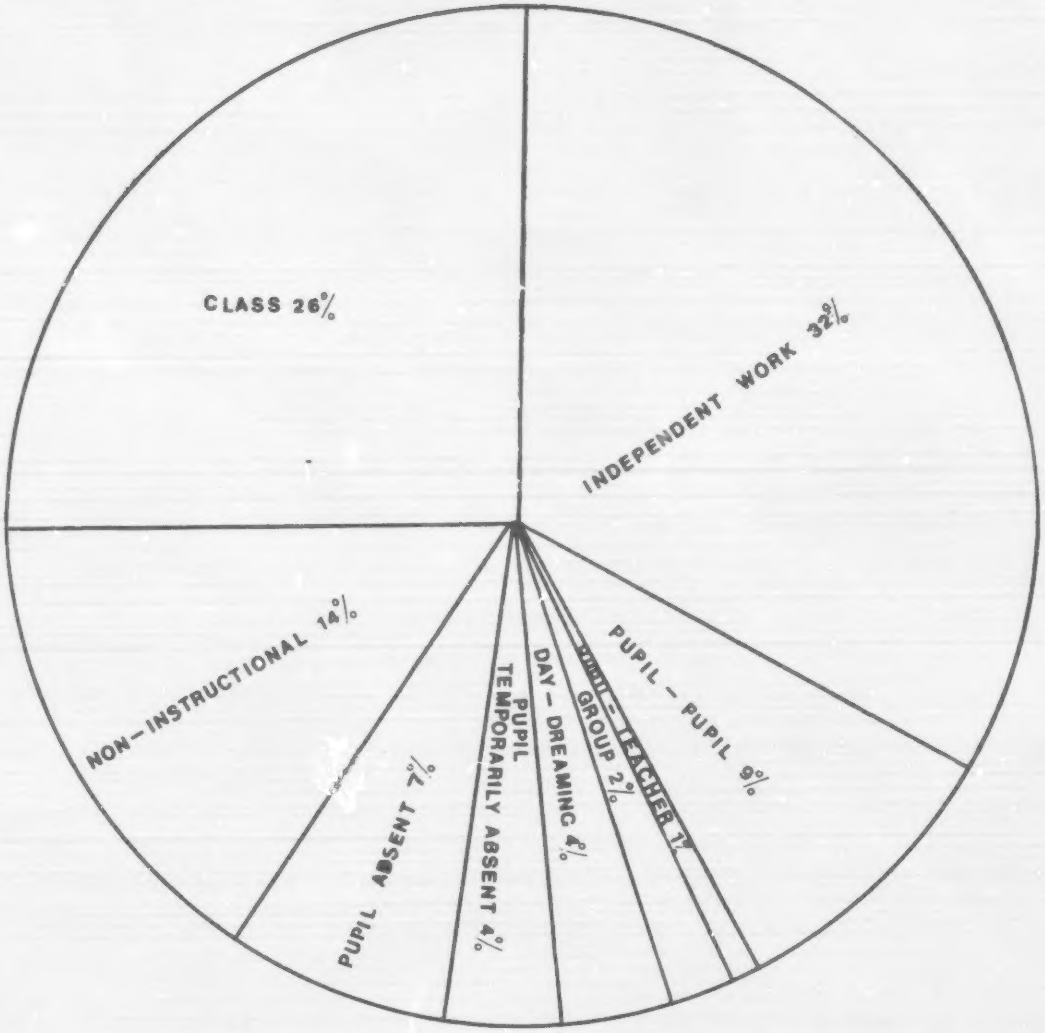


Table B.3: *Frequency of pupils' interactive activities.*

			Audience		
Activity	Pupil(s)	Teacher	Group	Class	Total
Reading aloud	-	0.11	0.19	0.06	0.36
Listening	1.37	0.42	1.03	19.77	22.59
Talking	6.22	0.55	0.14	0.53	7.44

It is apparent from Table B.3 that pupils were rarely observed reading aloud and it is notable that only one of the 3,600 observation records involved a pupil reading to the class. Observations of pupils talking to a group, class or teacher were also infrequent. However, pupils were more frequently engaged in talking to other pupils.

One in five pupils were observed listening to a speaker in a class group. This behaviour encompassed four PAOR categories, including listening to teachers, pupils and other adults as well as 'looking and listening'. Overall, over twenty-two per cent of the sample of pupils were observed listening to another person speaking.

To summarise, this section had described the frequency of specific pupil activities among a sample of 200 pupils. These pupils were observed in a wide variety of school settings. However, the frequency of the activities in two independent samples were not significantly different, which suggested that the distribution of activities was comparatively stable in the population of classes.

A third of the observed activities involved pupils working independently at specific seat-work exercises or assignments. A fifth of the observations involved pupils listening to speech, most frequently from the teacher. A further fifth of the observation encompassed non-instructional activities such as waiting, and the activities of some ten per cent of the sample pupils were not coded as they were either temporarily out of the room or absent from school. Class-based and independent activities were observed far more frequently than either pupil-pupil, pupil-teacher or group activities.

PUPILS USE OF MATERIALS

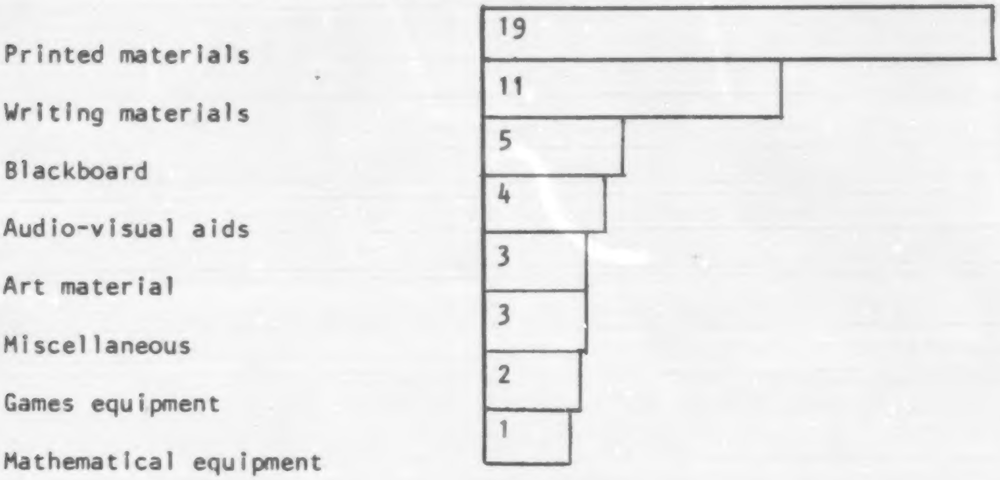
Forty per cent of the records of pupil activity were not accompanied by records of material resources. On these occasions pupils were either engaged in interactive activities or independent non-instructional activities which did not involve the use of material aids. Ten per cent of the pupil records referred to occasions when pupils were either temporarily absent from the classroom or not observed during a school visit. Half of the pupil activity records were therefore associated with a material resource.

Figure B.2 graphically illustrates the relative frequencies of eight major categories of material resource. These were:

> *Printed materials* - including text books, story books, reference books, dictionaries and graded readers.
>
> *Writing materials* - including exercise books, paper and pencil and routine materials. This category was only employed if the pupil was not also using printed material or the blackboard.
>
> *Blackboard* - this category was used when a pupil was working on exercises or problems written on the blackboard or the pupil was looking at the blackboard while listening to the teacher or another pupil speaking.
>
> *Audio-visual aids* - including television, radio, tape-recorder and film projector.
>
> *Art material* - including art paper, paints, crayons and modelling material.
>
> *Miscellaneous* - including musical instruments, nature study objects, display charts and the variety of materials used when the pupil was collecting and arranging the desk.
>
> *Games equipment* - including fixed apparatus and small equipment.
>
> *Mathematical equipment* - including blocks, set squares, scales and clocks.

Approximately one fifth of the pupils were engaged in activities involving printed materials. Story books, reference books, dictionaries and graded readers were each recorded for an average of one to two per cent of pupils. English and mathematics text books were each being used by some three to four per cent of the pupils and 'other' text books including geography and history texts were used with a frequency of less than two per cent. Other printed materials such as work cards were recorded for less than one per cent of the of the pupils.

Figure B.2: Pupils use of materials: *mean frequency of major material categories.*



The blackboard was the most important item of classroom equipment. It was used by pupils who were working independently as well as those who were listening to the teacher and looking at the black board. Display charts were rarely observed in use and were invariably prepared by student teachers rather than class teachers.

In general, the most important classroom resources were printed and writing materials. Pupils used the blackboard less frequently than printed sources of information. However, it was the most important single item of classroom equipment.

PUPIL ACTIVITIES AND MATERIAL RESOURCES

The concurrent frequencies of PAOR material and activity categories were examined for each of the two subsamples. Although certain associations between activity and material were frequent (e.g. 'writing with exercise book'), the majority of these associations occurred infrequently. Categories with a frequency of less than one per cent in either or both subsamples were combined to form more stable descriptions of pupil activity. The combined categories were based on similarity of activities or the materials.

For example, 16 pupil observations were categorised as 'reading English text books' and 96 pupil observations were categorised as 'looking and writing using English text books'. As these activities were similar they were combined to form the category 'using English text books'.

Table B.4 illustrates how the category 'using work cards' was formed by combining eight infrequently observed associations between 'looking and writing' or 'reading' and 'reading kit', 'printed work cards', 'teacher work card' and 'other printed material'.

Table B.4: *Frequency of activity and material categories which were combined to form the general category 'using work cards'.*

Activity	Material	Frequency (N=3600)
Looking and writing	Reading kit	8
Reading	Reading kit	3
Looking and writing	Printed work cards	14
Reading	Printed work cards	13
Looking and writing	Teacher work card	9
Reading	Teacher work card	5
Looking and writing	Other printed material	2
Reading	Other printed material	2
	TOTAL	54

None of these combinations of activity and material occurred with a frequency of one per cent, but as the materials were similar they were included in the general category 'using work cards'.

Not all activity categories were accompanied by the use of materials. Non-instructional activities, including arranging and collecting materials, moving, routine tasks, waiting and day-dreaming were either associated with a wide variety of miscellaneous materials or were carried out without materials. These categories were retained as originally described in the PAOR.

The four categories which described pupil-teacher interaction occurred so infrequently that they were summed to form the general category 'interaction with teacher'. Similarly, the four categories which described group interaction were summed to form the general category 'working with teacher in a group'.

The categories which were used to record interactions between pupils or within class groups were modified by three topic categories which described the nature of the conversation. These categories distinguised conversations which referred to the lesson topic from those which related to classroom routine or organisation and those which referred to discipline. A fourth category, 'no material', was completed if the topic of conversation was not related to any of these topics or if the conversation was not heard by the observer.

Only seven of the pupil records referred to pupils listening to their teacher disciplining the class. These interactions were therefore not distinguished from those involving pupils listening to teacher talking about the lesson topic. Similarly, few of the pupil interactions with other pupils involved routine matters and these were therefore not distinguished from conversations about lesson topics.

Figure B.3 details the categories which were formed from the combination of PAOR categories. The patterns of class activity were examined using these modified PAOR categories. A record sheet, which detailed each pupil's activity, the topic of their conversation and the materials they used was completed for each observation cycle. These data were converted to summed frequencies for each of the modified categories and these were converted to class percentages. This procedure facilitated comparisons between classes of different sizes and analysis of class differences in pupil activity.

Figure B.3: *Recoded pupil activity.*

Independent Work Activities	Combined codes
Reading story book	0102[*]
Reading reference books	0103
Using mathematics text books	0105/0305
Using English text books	0106/0306
Using work cards	0104/0304 0112/0312 0113/0313
Using dictionary	0110/0310
Using blackboard	0130/0330
Using other text books or pamphlets	0107/0307 0116/0316 0109/0309
Completing a test	0134
Using graded reader	0108/0308
Writing	0232/0233
Copying from the blackboard	0430
Copying from books	04-
Painting	0518
Drawing	0532
Tracing/drawing diagrams	0620/0631
Mathematics activities	0720
Activity work	07-
Thinking	13-
Non-instructional Activities	
Arranging and collecting materials	08-
Moving	09-
Routine tasks	10-
Waiting	11-
Day-dreaming	14-/41-/0114

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[*] The combined codes were formed from the activity code (01 = Read) and the Materials code (02 = story book).

Pupil-Pupil Activities

Co-operative activity work	16-/28-
Chatting to another pupil(s)	1701/1901
Listening to another pupil(s)	1801
Talking to pupil about work	1740

Pupil-Teacher Interaction

Interacting with teacher	20-/21-/22-/23-

Group-Teacher Interaction

Working with teacher in a group	24-/25-/26-/27-/29-

Class Activities

Listening to teacher talking about routine	3038
Listening to teacher talking about lesson	3040
Listening to another pupil	3140
Listening to teacher and looking at text-books or other printed material	3202/3203/3204/3205/3206
Attention seeking	12-
Listening to radio	3221
Looking at television	3222
Listening to teacher and looking at black-board	3230
Listening and writing (note taking)	3333
Pupil talking or reading to class	34-/35-
Singing	36
Class activity in games/P.E.	3901/3926
Drama activity	38-
Chanting	37-
Queueing	40-
Pupil temporarily absent	4237

APPENDIX C

TABLES

The numbering of the tables in Appendix C is arranged to correspond with the sections of the report in which the tables are referenced. For example, the numbering of a table in the Appendix as Table 3.1 indicates that this table is referenced in Chapter 3 of the report, and that it is the first table to [illegible] so referenced in this chapter.
The pages in this section are not numbered.

Table C.3.1: Rural classes: *Size, social class, age, sex and class grouping.*

Class	Size	Age range	Mean age	P4	P5	P6	P7	Girls	NM fathers
					(percentage representation within classes)				
011	32	9.09 - 11.08	10.08	-	13	50	38	38	22
021	19	8.06 - 11.10	10.03	37	26	32	05	74	26
031	33	9.10 - 11.11	10.09	-	-	61	39	58	06
041	30	9.07 - 11.10	10.11	-	-	47	53	53	27
051	25	8.11 - 11.08	10.06	-	48	28	24	24	16
061	24	8.03 - 11.10	10.02	19	29	13	38	50	13
071	34	9.04 - 10.10	9.11	-	41	59	-	56	41
013	20	8.02 - 11.09	10.00	42	16	26	16	53	11
014	27	8.08 - 11.08	10.02	-	41	37	22	44	19
015	31	8.08 - 10.07	10.00	03	23	74	-	00	29
016	17	8.00 - 11.10	10.03	29	18	29	24	29	35

Table C.3.2: Urban classes: *Size, social class, age, sex and class grouping.*

Class	Size	Age range	Mean age	P4	P5	P6	P7	Girls	NM fathers
081	35	9.11 - 10.10	10.05	-	-	100	-	37	34
082	31	9.11 - 11.07	10.06	-	32	68	-	52	19
091	34	9.10 - 10.09	10.02	-	-	100	-	47	12
092	30	9.10 - 11.07	10.06	-	-	100	-	50	13
093	30	10.01 - 10.09	10.04	-	-	100	-	47	10
094	27	9.11 - 11.11	10.10	-	-	59	41	48	07
101	37	10.02 - 11.10	11.03	-	-	70	30	46	57
102	38	10.00 - 10.11	10.05	-	-	100	-	40	66
103	39	9.09 - 10.10	10.05	-	-	100	-	41	80
111	30	9.11 - 10.08	10.04	-	-	100	-	70	67
112	30	10.00 - 11.08	10.08	-	-	100	-	70	70
113	28	9.11 - 10.10	10.03	-	-	100	-	46	79
121	40	9.10 - 11.07	10.06	-	-	100	-	48	48
122	38	9.09 - 11.10	10.04	-	-	100	-	42	47
171	29	9.01 - 10.04	9.10	-	-	100	-	24	17
172	28	9.11 - 11.02	10.02	-	-	100	-	11	39
181	34	8.09 - 11.07	10.04	3	-	97	-	47	44

Table C.3:3 *Class means and standard deviations for reading and non-verbal test.*

Classes	Reading Test BD		Non-Verbal Test BD	
Rural	Mean	S.D.	Mean	S.D.
011	96.4	14.9	94.1	10.5
021	-	-	-	
031	91.5	13.2	91.6	13.0
041	97.5	14.4	96.5	16.2
051	88.8	16.0	92.8	14.3
061	103.0	12.4	100.8	12.2
071	108.0	14.1	100.0	11.8
013	92.6	11.2	95.2	11.3
014	97.7	10.8	97.6	11.8
015	96.1	11.2	92.4	10.0
016	99.6	8.9	88.5	9.5
Urban				
081	102.7	11.1	106.7	12.1
082	93.4	9.5	92.7	10.1
091	99.2	8.9	95.7	11.9
092	87.6	11.3	85.9	9.9
093	90.2	10.5	90.8	10.0
094	84.5	10.9	83.5	9.8
101	97.7	12.1	98.5	13.8
102	111.9	12.6	116.0	12.1
103	113.9	14.2	110.6	15.3
111	106.7	15.8	103.9	12.9
112	106.2	11.1	101.8	12.8
113	108.5	14.4	105.2	15.7
121	103.1	10.8	101.9	11.9
122	106.1	14.2	103.4	12.1
171	95.4	14.2	91.9	14.6
172	100.0	11.9	100.0	8.6
181	93.3	13.1	90.7	12.2
Total (788)	99.5	14.4	98.1	14.1

Table C.3.4: *Biographical characteristics of teachers in rural and urban schools.*

		Rural teachers (N=12)	Urban teachers (N=18)
Sex:	Male	9	11
	Female	3	7
Age:	under 25	0	4
	25 - 55	8	13
	over 55	4	1
Marital status:	Single	1	6
	Married	11	12
Training:	2 year training course	4	2
	3 year training course	5	10
	4 year training course	0	3
	B.Ed. degree	1	2
	Degree and teacher training	2	1
Experience:	less than one year	0	3
	one year but less than three	0	3
	3 years but less than 10 years	3	6
	10 years or over	9	6
Status:	Assistant teacher	3	6
	Post with special responsibility	0	10
	Vice-principal	0	2
	Principal	9	0

Table C4.1: *Numbers of rural and urban classrooms rated on indices of classroom accommodation.*

		Rural (N = 11)	Urban (N = 17)
Hut		0	2
Main building		11	15
Used for access		5	3
Self-contained		6	14
Floor space:	cramped	3	5
	adequate	6	6
	roomy	2	6
Display boards:	none	2	1
	adequate	7	13
	good	2	3
Appearance:	drab	1	2
	average	7	12
	colourful	3	3
Sound insulation:	poor	1	3
	adequate	6	5
	good	4	9
Natural lighting:	poor	1	0
	adequate	7	10
	good	3	7
Artificial lighting:	poor	2	0
	adequate	7	12
	good	2	5
Heating:	poor	1	0
	adequate	7	9
	good	3	8
Ventilation:	poor	2	3
	adequate	7	8
	good	2	6

Table C.4.2: *Numbers of rural and urban classrooms rated on indices of classroom equipment*

	Rural (N = 11)	Urban (N = 17)
No storage cupboard for class	2	6
No free-standing shelves	6	11
No shelves around room	3	4
No built-in storage units	9	11
No extra table(s) for models etc	3	4
No large wall blackboard	7	6
No sink	6	6
No modern tables for pupils	4	9

Table C4.3: *The most popular text books, work cards and reading series.*

MATHEMATICS TEXT BOOKS AND WORK CARDS	No. of schools using the series
ALPHA/BETA MATHEMATICS, T.R. Goddard and A.W. Grattidge; Schofield and Sims	12
BASIC MATHEMATICS METRIC EDITION, A.L. Griffiths; Oliver and Boyd	6
TWO GRADE ARITHMETIC, K. Lovell and and C.H.J. Smith; Ginn	4
MATHEMATICS FOR SCHOOLS, H. Fletcher and A. Howell; Addison - Wesley	3
FOUR RULES, K.A. Hesse; Longman	3
MATHEMATICS WORKSHOP, L.G. Marsh; Black	3
MORE PRACTICE IN MATHEMATICS, J.W. Adams and N.P. Beaumont; Schofield and Sims	2
PRACTICAL MATHEMATICS; Simcock	2
MACMILLAN MATHEMATICS; Macmillan	2
ENGLISH TEXT BOOKS AND WORK CARDS	
ENGLISH FOR PRIMARY SCHOOLS, W.P. Cleland; Nelson	6
READ, THINK AND WRITE, H. Richards; Schofield and Sims	2
LOOK, THINK AND WRITE, F.M.M. Meade and F. Kerry Chambers	2
WORDS AT WORK, F. Mosby; Blackie	2
EFFECTIVE COMPREHENSION, A.B. Mountain and W. Barnes; Schofield and Sims	2
READING TO SOME PURPOSE, P. Flowerdew and R. Ridout; Oliver and Boyd	2
EXPLORE AND WRITE, J. Jennings; Educational Company of Ireland	2
HULTON'S READ AND DISCOVER; Hulton	3
LADYBIRD COMPREHENSION CARDS; Ladybird Books Ltd	5
HISTORY TEXT BOOKS AND WORK CARDS	
LOOKING AT HISTORY, BOOK 3. TUDORS AND STUARTS, R.J. Unstead; Black	4
FOCUS ON HISTORY, R. Mitchell and G. Middleton (Eds); Longman	3
KINGSWAY HISTORY FOR JUNIORS, R. Power; Evans	2
HISTORY WORKSHOP, H.T. Sutton and G. Lewis; Cassell	3

	No. of schools using the series
GEOGRAPHY TEXT BOOKS AND WORK CARDS	
LOOKING AT BRITAIN, R.J.Unstead (Ed); Black	4
AN INTRODUCTION TO GEOGRAPHY FOR IRISH SCHOOLS	2
QUEENSWAY JUNIOR GEOGRAPHY, BOOK 3, ABOUT BRITAIN, E.J. Barker; Evans	2
THE BRITISH ISLES, WHERE, HOW AND WHY, A. Murray; Collins	2
TRAILBLAZERS; Hamish Hamilton	2
DICTIONARIES	
A FIRST DICTIONARY, W.D. Wright; Nisbet	9
CHAMBERS SCHOOL DICTIONARY; Chambers	5
A SIMPLIFIED DICTIONARY, O. Harland (Ed); Schofield and Sims	3
NELSONS JUNIOR ENGLISH DICTIONARY, F.W. Witty; Nelson	3
THE SMALL SCHOOL DICTIONARY, J.A.C. Stevenson; Blackie	2
READING SERIES AND READING LABORATORIES	
WIDE RANGE READERS, F.J. Schonell and P. Flowerdew; Oliver and Boyd	9
FIRST AID IN ENGLISH, A. MacIver; Gibson	7
JANET AND JOHN, M. O'Donnell *et al*; J. Nisbet	5
ENJOY READING, R.E. Rogerson and C.M. Smith; W.R. Chambers	3
READING ON, P. Flowerdew and Stewart; Oliver and Boyd	3
PLEASURE AND PROGRESS; Holmes and McDougall	2
WAYFARER BOOKS, G. Bond and L.F.W. White (Ed); Blackie	2
NEW INTEREST, P. Flowerdew; Oliver and Boyd	2
READING TODAY, G. Austin; Ginn	2
RADIANT READING, T.C. Collocott (Ed); W.R. Chambers	2
SRA READING LABORATORY, D.M. Parker; Science Research Associates	3

Table C.5.1: *Varimax factor solution for teacher data (decimal points omitted).*

	I	II	III	IV	V	VI	VII	VIII
Composition	21	-05	-11	-72	14	18	-19	-12
Spelling	15	-39	30	-21	04	48	46	-02
Formal grammar	11	-06	82	11	-10	16	03	23
Projects	35	04	-05	15	36	12	55	21
Tests	-27	-26	22	00	-18	-31	22	68
Free activity	-04	-00	-23	69	08	31	-26	06
Group work	18	66	06	-00	-22	46	24	-19
Formal sums	16	-28	59	-21	22	26	-24	20
Problem sums	-01	-13	-02	-09	86	08	12	-00
Practical arithmetic	11	21	-09	19	86	-00	-05	-02
Stories	64	20	05	02	-08	47	-05	-29
Tables	80	-12	12	-21	11	08	13	-20
Restricted pupil movement	-05	41	79	-03	-11	03	06	-15
Seats allocated	-11	01	10	-26	34	73	-23	08
Seating by ability	-14	22	-21	-46	-25	49	08	36
Seating in groups	-38	18	-03	35	14	-06	67	05
Stability of seating	18	06	-27	-01	-29	10	62	21
Use of stars	-14	-00	07	13	11	26	09	83
Written work marked	23	51	22	19	26	16	-02	37
Problems marked	-06	15	02	83	10	-05	03	02
No correction required	69	41	03	-10	04	-23	-09	05
Emphasis on class teaching	-04	-81	01	-13	-09	14	-24	08
Emphasis on teaching ability groups	-06	34	05	-29	09	-26	73	-03
2+ homeworks	12	-05	22	17	-00	71	00	10
Percentage variance	9.06	9.73	8.87	10.45	9.13	10.52	9.74	7.62

Table C.6.1: Pupil attitudes to specific activities: *Percentage of pupils stating that various activities were liked very much (L) or not at all liked (D) by sex of pupil.*

		Boys	Girls	All
Reading aloud to the teacher (N = 703)	L	22	36***	29
	D	37	18	28
Tables (N = 723)	L	28	19***	24
	D	43	41	42
Spelling (N = 746)	L	37	46***	41
	D	29	15	23
Being read to by the teacher (N = 717)	L	78	81	79
	D	6	6	6
Games (N = 746)	L	92	93	93
	D	1	1	1
Needlework (N = 329)	L	-	55	55
	D	-	11	10
Craftwork (N = 509)	L	67	55	64
	D	7	7	7
Writing stories (N = 746)	L	33	37	35
	D	32	27	30
Mathematics (N = 746)	L	21	19	20
	D	44	39	42
English exercises (N = 746)	L	30	44***	36
	D	27	14	21
Religious education (N = 746)	L	48	50	49
	D	18	11	15
Painting (N = 718)	L	67	77**	72
	D	12	4	9
Doing my own project (N = 612)	L	68	68	68
	D	8	7	7
Discussions (N = 718)	L	54	52	53
	D	16	11	16
Mathematics problems from the blackboard (N = 705)	L	27	23	25
	D	46	44	45

		Boys	Girls	All
Geography (N = 711)	L	42	34	38
	D	20	23	22
Acting (N = 717)	L	58	75***	65
	D	18	5	12
Reading library books (N = 746)	L	54	64**	58
	D	7	3	5
Reading reference books (N = 718)	L	36	25***	31
	D	24	22	23
History (N = 716)	L	55	43**	49
	D	17	20	18
Physical education (N = 725)	L	84	92***	87
	D	6	1	4
Music (N = 717)	L	28	58***	41
	D	40	10	26
Writing exercises (N = 730)	L	30	41***	35
	D	32	16	25
Watching television programmes in school (N = 661)	L	73	63**	68
	D	6	6	6
Science (N = 486)	L	48	50	48
	D	18	15	17
Listening to a radio programme (N = 600)	L	41	43	42
	D	17	9	14
Doing class projects (N = 566)	L	53	61	57
	D	17	10	14
Nature study (N = 669)	L	48	54	51
	D	18	13	16

Significance of χ^2: * for $P < 0.05$; ** for $P < 0.01$; *** for $P < 0.001$

Table C.6.2: Pupil attitudes towards mathematics: *the criterion correlation (r), final Beta weights and percentage variation explained by each predictor.*

Predictors	r	Beta	% variation 100 (r. Beta)
PUPIL CHARACTERISTICS			
Sex of pupil	.03	-.00	-0.00
Age of pupil	.13	.01	0.03
Social class of pupil	.14	.12	1.68
Ability level	.10	.10	1.04
SCHOOL CHARACTERISTICS			
Rural/urban	.01	15	-0.21
TEACHER CHARACTERISTICS			
Experience	.10	.08	0.80
Sex of teacher (male)	.03	.11	0.34
CLASS RESOURCES			
Range of mathematics equipment	-.01	-.09	0.09
Range of mathematics text books	.10	.05	0.51
Range of mathematics work cards	06	.12	0.67
TEACHING VARIABLES			
Frequency of formal sums	-.05	-.30	1.03
Frequency of practical arithmetic	-.01	.01	-0.12
Frequency of mathematics tables	.09	.12	1.16

Total number of pupils = 743

Table C.6.3: Pupil attitudes towards English activities: *the criterion correlation (r) and final Beta weights for 14 predictors (decimal point omitted).*

Predictors	English exercises		Spelling		Reading library books		Writing stories	
	r	Beta	r	Beta	r	Beta	r	Beta
PUPIL CHARACTERISTICS								
Sex of pupil (girls)	18	18	14	13	12	13	05	04
Age of pupil	-06	-06	-05	-02	-04	-01	-05	-06
Social class of pupil	02	03	-00	-05	-00	-00	04	03
Reading attainment	-05	-03	09	07	08	10	04	02
SCHOOL CHARACTERISTICS								
Rural/urban	12	18	-04	06	06	10	-01	-04
TEACHER CHARACTERISTICS								
Experience	01	-09	-02	07	-04	-13	02	09
Sex of teacher (male)	03	08	07	13	-03	-04	00	19
CLASS RESOURCES								
Range of English text books	-11	-07	-10	-17	00	06	-12	-21
Range of library books	-08	-16	03	06	-05	-07	-06	-03
Range of English work cards	12	18	-01	-03	04	03	-01	-09
TEACHING VARIABLES								
Frequency of compositions	-05	-04	-01	04	04	08	05	06
Frequency of stories	-05	-05	-01	-09	-00	05	-02	-03
Frequency of formal grammar	-04	-06	10	11	-04	00	-04	-12
Frequency of spelling	-09	-03	-01	03	-07	-00	-06	-09

Number of pupils = 732

Table C.8.1: Lesson Concern: *percentage of cycles spent on specific concerns in rural and urban classes.*

Lesson concern	Rural classes (N = 396)	Urban classes (N = 609)	All (N = 1005)
General English	19	30	26
Spelling	2	3	3
Reading	5	3	4
General Mathematics	15	19	18
Tables	>1	>1	>1
Religious Education	2	1	1
Environmental Studies	9	15	12
Music	4	5	4
Art/craft/needlework	9	6	7
French	0	>1	>1
Games/P.E.	4	2	3
Mixed Academic	30	12	19
No lesson	2	3	2
Library studies	>1	>1	>1
Intelligence testing	0	>1	>1

Table C.8.2: Lesson Mode: *percentage of cycles spent on specific lesson modes in rural and urban classes.*

	Rural classes (N = 396)	Urban classes (N = 609)	All (N = 1005)
Lesson Specific	33	40	37
Thematic	>1	2	2
Project work	>1	4	2
Practice	40	33	36
Corrections	>1	4	3
Testing	3	6	5
Mixed Mode	20	8	13
No lesson	2	3	2

Table C.8.3: Grouping: *proportion of cycles organised into specific group structures.*

Grouping	Rural (N = 396)	Urban (N = 609)	All (N = 1005)
Independent	37	42	39
Groups	6	3	5
Pairs	1	>1	>1
Class	25	36	32
Individual/group	24	8	15
Class/Individual	6	10	8

Table C.8.4: *Proportion of cycles in five curriculum areas associated with specific lesson modes in rural and urban classes.*

	Rural		*Urban*		*All*	
	N	%	N	%	N	%
ENGLISH	98		221		319	
Lesson specific		38		40		39
Thematic/project		0		4		3
Practice		50		40		43
Corrections		1		4		3
Testing		7		9		9
Mixed mode		4		3		3
MATHEMATICS	62		117		179	
Lesson specific		32		27		29
Thematic/project		0		3		2
Practice		60		51		54
Corrections		3		9		7
Testing		3		9		7
Mixed mode		2		1		1
ENVIRONMENTAL STUDIES	42		97		139	
Lesson specific		81		78		79
Thematic/project		7		13		11
Practice		2		4		4
Testing		7		4		5
Mixed mode		2		0		1
MIXED ACADEMIC	117		72		189	
Lesson specific		8		1		5
Thematic/project		0		8		3
Practice		30		29		30
Corrections		0		8		3
Testing		1		1		1
Mixed mode		62		51		58
NON-ACADEMIC	66		78		146	
Lesson specific		45		54		59
Thematic/project		0		8		4
Practice		55		33		42
Mixed mode		0		5		3

Table C.9.1: Pupil audience for specific activities: *Percentage of observation cycles in which teachers engaged in specific activities were addressing specific audiences.*

	Rural Teachers						*Urban Teachers*					
	Inst		*Corr*		*Organ*		*Inst*		*Corr*		*Organ*	
	N	%	N	%	N	%	N	%	N	%	N	%
ENGLISH	8		12		11		21		30		20	
Individuals				33		27				47		40
Groups		13		50		9		5		6		
Class		88		38		27		86		37		35
Independent/group						9						
Independent/class				8				10		7		10
None						27				3		15
MATHEMATICS	15		10		5		30		26		8	
Individuals				40				3		15		38
Groups		87				80		10		4		13
Class		13		50		20		63		58		13
Independent/group										12		
Independent/class				10				23		12		
None												38
ENVIRONMENTAL STUDIES	8		1		1		8		9		16	
Individuals						100				100		25
Group												
Class		100		100				100				31
Independent/group												6
Independent/class												38
MIXED ACADEMIC	14		28		12		2		19		8	
Individuals		7		25		17				58		38
Group		71		43		17						13
Class						33		100		26		38
Independent/group		21		32		25				10		
Independent/class										5		13
None						8						

Table C.9.2: Teacher movement for specific activities: *Percentage of observation cycles in which teachers engaged in specific activities were observed in specific positions in classrooms.*

	RURAL								URBAN							
	Inst		Correct		Organ		Gen. super		Inst		Correct		Organ		Gen. super	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ENGLISH	8		12		11		13		21		30		20		41	
Circulating		25		33		9		62		5		13		25		54
Own desk		25		17		46		7		19		43		35		32
Blackboard		38		-		-		-		33		7		-		-
Front		13		42		18		8		38		30		35		12
Side		-		8		27		-		-		3		5		2
Tables		-		-		-		23		5		3		-		-
MATHEMATICS	15		10		5		19		30		26		8		29	
Circulating		13		10		60		74		20		27		13		75
Own desk		-		40		-		10		7		27		50		14
Blackboard		27		30		-		-		57		46		-		3
Front		33		-		-		-		14		-		-		7
Side		13		20		40		16		-		-		38		-
Tables		13		-		-		-		3		-		-		-
ENVIRONMENTAL STUDIES	8		1		1		3		8		9		16		19	
Circulating		-		-		-		67		13		-		63		79
Own desk		-		-		-		-		25		100		19		21
Blackboard		25		100		-		33		-		-		6		-
Front		75		-		100		-		50		-		-		-
Side		-		-		-		-		13		-		6		-
MIXED ACADEMIC	14		28		12		38		2		19		8		15	
Circulating		14		18		33		29		-		16		13		60
Own desk		14		43		25		58		-		58		13		33
Blackboard		14		-		-		-		50		16		-		7
Front		21		11		8		-		50		5		50		-
Side		-		18		8		8		-		5		25		-
Tables		36		11		25		5		-		-		-		-

Table C.9.3: Teaching materials used while teachers were engaged in specific activities: *percentage of observation cycles in which teachers engaged in specific activities were observed to use specific resources.*

	RURAL CLASSROOMS					
	Instructing		Correcting		General supervision	
	N	%	N	%	N	%
MATERIALS	45		51		73	
Text book		16		39		7
Blackboard		36		14		3
Story/poetry book		4		0		1
Own notes		0		2		0
List of words		0		2		0
Display chart		2		0		0
Mathematical equipment		13		2		7
Readers		0		0		1
Miscellaneous		11		4		12
None		17		37		68
	URBAN CLASSROOMS					
	61		84		104	
Text book		18		31		10
Blackboard		56		29		12
Story/poetry book		2		0		0
Own notes		5		1		1
List of words		0		1		0
Display chart		5		1		0
Mathematical equipment		5		0		6
Readers		0		4		4
Miscellaneous		2		2		8
None		8		31		61

Table C.10.1: *Frequency of occurrence range and mean of PAOR pupil/material categories for 732 observation cycles.*

Category	Percentage of cycles which included activity	Sample Mean	Sample S.D	Range of class means
INDEPENDENT ACTIVITIES				
Reading story books	9.0	0.98	4.75	0.0 - 8.40
Reading reference books	9.0	0.82	3.62	0.0 - 5.00
Using maths text books	18.6	4.07	10.79	0.0 - 11.68
Using English text books	12.0	4.74	13.83	0.0 - 20.67
Using work cards	12.7	1.92	7.56	0.0 - 24.14
Using dictionary	12.7	1.91	8.40	0.0 - 10.65
Using blackboard	18.7	2.95	9.27	0.0 - 8.31
Writing	48.2	7.56	14.05	0.7 - 24.13
Using 'other' text books	11.9	1.45	5.33	0.0 - 5.10
Using graded reader	13.9	1.58	5.38	0.0 - 7.38
Completing a test	2.5	0.49	4.90	0.0 - 5.76
Copying from the blackboard	4.9	0.98	6.73	0.0 - 4.17
Copying from books	11.2	1.51	6.94	0.0 - 11.60
Painting	3.7	0.27	1.80	0.0 - 1.17
Drawing	15.2	1.71	6.09	0.0 - 7.33
Tracing/drawing diagrams	10.7	1.02	4.42	0.0 - 3.56
Activity work	6.0	0.70	4.80	0.0 - 6.50
Mathematics activity	3.8	0.46	2.99	0.0 - 3.21
Thinking	40.8	3.75	6.63	0.8 - 9.65

cont'd

Category	Percentage of cycles which included activity	Sample Mean	Sample S.D	Range of class means
PUPIL-TEACHER INTERACTION				
Interacting with teacher	27.7	1.38	2.90	0.0 - 6.00
GROUP INTERACTION				
Working with teacher in a group	19.1	3.41	10.46	0.0 - 15.65
PUPIL-PUPIL ACTIVITIES				
Co-operative activity work	13.8	2.34	8.93	0.0 - 13.00
Chatting to another pupil	55.9	4.84	6.45	0.2 - 11.71
Listening to another pupil	35.5	1.75	2.75	0.7 - 3.08
Talking to pupil about work	30.9	2.02	3.82	0.1 - 6.00
CLASS ACTIVITIES				
Listening to teacher talking about classroom routine	17.1	1.06	3.07	0.0 - 4.23
Listening to teacher talking about lesson topic	45.1	8.29	15.17	0.2 - 20.23
Listening to another pupil	26.5	3.38	3.28	0.0 - 9.17
Listening to speaker and looking at text book or other printed material	7.8	2.05	9.19	0.0 - 20.00
Attention seeking	29.9	2.86	6.36	0.0 - 13.00
Listening to speaker and looking at blackboard	17.6	3.16	9.55	0.0 - 6.08
Listening and writing (note taking)	9.8	1.87	7.93	0.0 - 7.75
Pupil talking or reading to class	13.5	0.66	1.95	0.0 - 1.93

cont'd

Category	Percentage of cycles which included activity	Sample Mean	Sample S.D	Range of class means
NON-INSTRUCTIONAL				
Arranging and collecting material	52.00	4.07	5.75	1.1 - 6.57
Moving	42.2	2.85	5.16	1.0 - 4.78
Routine tasks	32.4	1.84	3.36	0.1 - 4.36
Waiting	42.1	3.63	6.17	1.1 - 7.80
Day-dreaming	62.8	5.45	7.13	1.0 - 14.60

Table C.10.2: *Mean percentage frequencies of specific pupil activities for four curriculum areas.*

		PUPIL ACTIVITIES		
Curriculum area	N cycles	Talk work	Collect/ arrang	Day-dreaming
English	296	1.53	3.71	7.08
Mathematics	165	2.65	3.31	4.48
Env. studies	88	3.21	2.74	4.82
Mixed academic	168	1.66	6.16	4.02

Table C.10.3: *Mean percentage frequencies of specific pupil activities by class grouping.*

		PUPIL ACTIVITIES			
Pupil grouping	N cycles	Pupil chat	Pupil interact teacher	Routine	Day-dreaming
Independent	311	8.86	2.16	2.68	4.54
Group	36	3.50	0.61	0.67	5.14
Class	201	5.32	0.35	0.88	7.88
Group/ind	118	4.96	1.57	1.36	4.12
Class/ind	66	4.27	1.00	2.30	4.33

Table C.10.4: *Mean percentage frequencies of specifc pupil activities by teacher position in classroom.*

		PUPIL ACTIVITIES		
Teacher position	N cycles	Talk work	Pupil interact teacher	Moving
Circulating	185	3.28	1.97	3.15
Own desk	220	2.10	2.06	4.37
Blackboard	86	1.06	0.37	1.28
Front	139	0.89	0.50	1.66
Side	58	1.50	1.24	2.43
At tables	40	2.13	0.63	3.25

Table C.10.5: *Mean percentage frequencies of specific pupil activities by teacher activities in classroom.*

TEACHER ACTIVITIES	N cycles	PUPIL ACTIVITIES Pupil chat	Pupil interact teacher	Collect/ arrang	Moving	Waiting	Day-dreaming
Instructing	106	4.30	0.44	3.12	1.77	3.74	4.44
Testing	51	4.28	1.19	4.24	2.08	7.55	5.12
General supervision	177	8.62	2.81	4.34	3.58	3.51	4.29
Reading story	24	8.75	0.92	2.21	1.29	2.08	14.96
Hearing reading	43	3.91	0.51	3.44	2.07	1.37	5.30
Group discussion	45	5.51	0.33	2.00	0.78	1.67	9.62
Dictating	10	2.80	0.70	4.00	3.30	7.30	2.00
Not interacting	52	7.27	0.79	4.29	4.81	3.17	4.90
Correcting work	138	7.07	1.42	4.17	2.87	3.41	5.88
Organising	86	7.08	1.21	7.43	4.65	4.63	4.10